POLYURETHANE FORMULATIONS

PU FOAMING SYSTEMS

Poly.tec Srl

ABOUT US

POLY.TEC SRL was born in Turin in 1996 from the passion and the previous experience of its shareholders, already highly engaged in the chemical world for more than 40 years.

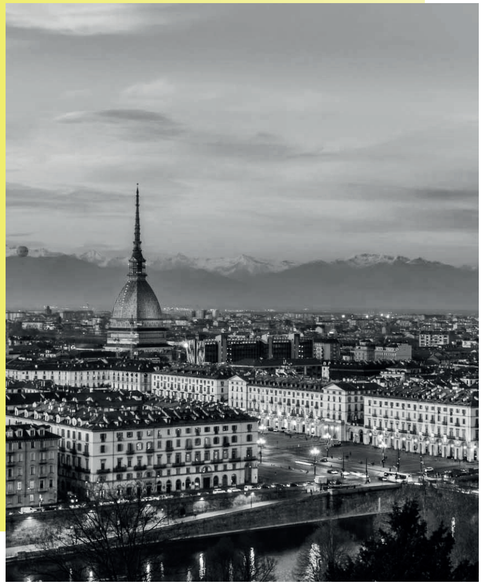
Over the years, the company has joined a primary Italian Industrial Group, engaged in the chemical sector too. The today goal remains to create chemical formulations, with particular attention to polyurethane systems (polyols + isocyanate compound) to be applied in grooves, flat surfaces, pvc and epoxy resins.

Professional employees inside POLY.TEC make available their multidimensional knowledge to grant the customer right solutions in order to solve problems, starting from technical and chemical point of view upon the use of the gasket machine and its assistance, to a scientific one to assure good performance and high quality of our products.

Products portfolio is dynamic and mainly focused on thixotropic and fluid formulations. It is constantly updated based on market requests and the company can supply specific advices and suggestions to customers in order to create new formulations starting from their needs and requests.

POLY.TEC has studied and contrived a wide range of articles, which complete polyurethane gaskets business, like washing solvents for the dosing machine, adhesion promoter (primer) for surfaces difficult to treat and descalers to clean the machine from PU residues.

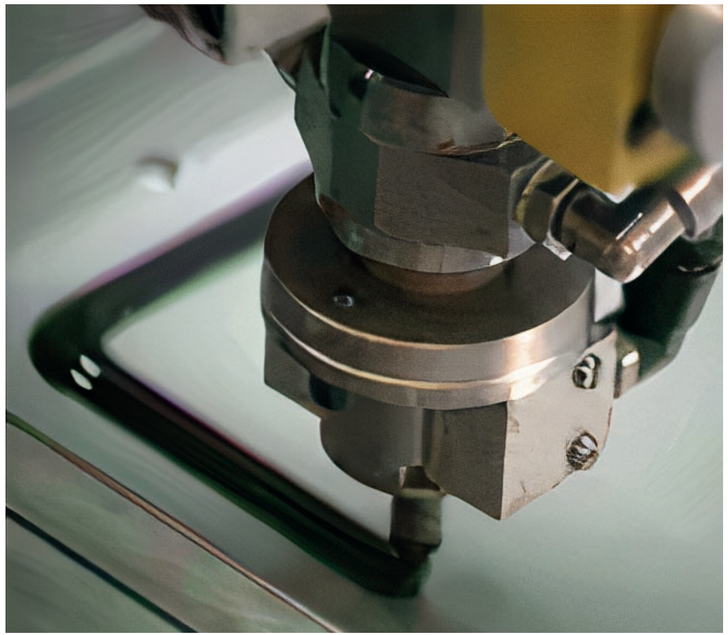
All products supplied are highly specific and provided with technical data sheet available upon request.



POLY.TEC SEALING SOLUTIONS

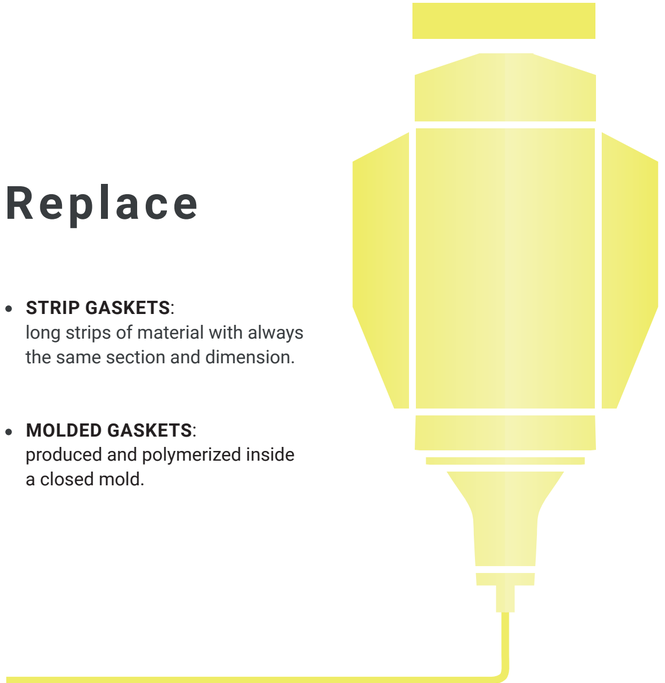
Poly.Tec focuses its job on the FIPFG technology, acronym for “Formed In Place Foam Gasket”.

FIPFG technology describes the process where a 2K Liquid PUR system is applied to the indicated support and the desired gasket is formed through a free controlled expansion.



Replace

- **STRIP GASKETS**: long strips of material with always the same section and dimension.
- **MOLDED GASKETS**: produced and polymerized inside a closed mold.



Advantages

- High productivity process
- High automation
- Chance to interface the process with the production flow
- Cost reduction
- Constant and high quality foaming

Gasketing vs Conventional Gaskets

	FIMP	Foam Strip		Die-Cut Gasktes		Moulded Foam	
		Self Adhesive	No Self Adhesive	Self Adhesive	No Self Adhesive	Self Adhesive	No Self Adhesive
SELF ADHERING ?	yes	yes	no	yes	no	yes	no
RELEASE PAPER WASTE ?	no	yes	no	yes	no	yes	no
SEAMS OR JOINTS (THAT CAN LEAK) ?	no	yes	yes	no	no	no	no
IS CHANGING GASKET DESIGN COSTLY OR PROTOTYPING DIFFICULT ?	no	no	no	yes	yes	yes	yes
OPEN CELLS ON AT LEAST ONE SURFACE OF FINISHED MATERIAL ?	no	yes	yes	yes	yes	no	no
INVENTORY NECESSAY FOR EACH SIZE GASKET ?	no	yes	yes	yes	yes	yes	yes
RELATIVE MATERIAL COST PER PART	low	low	low	high	high	high	high
RELATIVE LABOR COST PER PARTS	low	med.	high	med.	high	med.	high

Gasketing – Pur Advantages

FEATURES	BENEFITS
Cures at room temperature	**No heat required in process.**
	Eliminates thermal effects on heat-sensitive substrates.
Superior performance standard gasket materials	**Compared with die-cut and strip gaskets offers an integral envelope for improved chemical and water resistance.**
	The continuous bead eliminates or minimises leakage at the knit line.
Cost-effective alternative to standard gasket materials	**Eliminates labor for glue-in-place gaskets.**
	Eliminates inventory of various sized gaskets.
Better compression set under load (compared with 1 component MFiS)	**Provides superior barrier properties.**
MFiS-PUR used Worldwide for several years	**Proven technology.**

POLY.TEC PRODUCTS

Polytix 30.11 series and Polyflu 10 series represent our formulation lines, available and customizable according to customer requests and technical specifications, so that they can always be compliant to the contact with external agents like dust

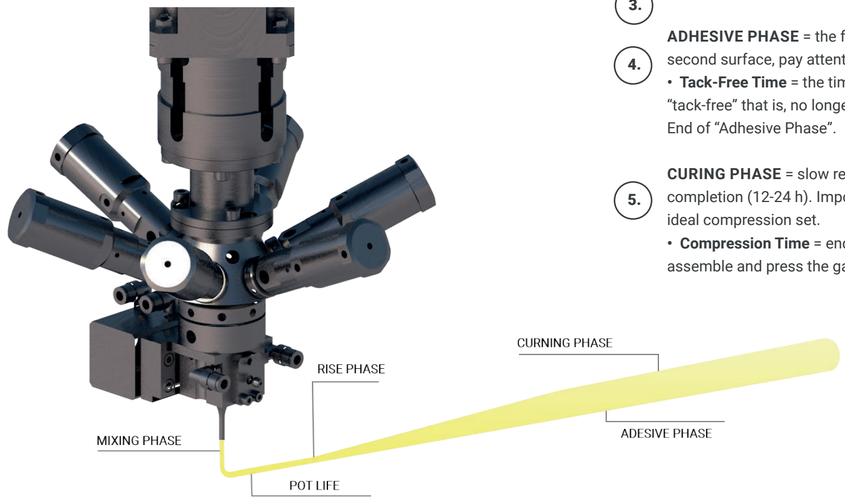
Formulations

- POLYTIX 30.11 series Foamed in Place 2K Thixotropic
- POLYFLU 10 series Foamed in Place 2K Liquid
- POLYTIX 00 series for gluing and adhesives
- Washing solutions for the dosing machine
- Adhesion promoter (primer) for different surfaces
- Descalers for cleaning dosing machine metal parts

Features

- High IP Protection level achievable
- Quick polymerization
- High compression set
- Wide range of formulation according to technical requests
- UL 50E upon request
- ISO 9001:2015

Curning process



1. **MIXING PHASE** = components mixing and start of the reaction
2. **POT LIFE** = heat and viscosity increase
   - **Cream Time** = end of “Pot Life”
3. **RISE PHASE** = time of foam maximum expansion
4. **ADHESIVE PHASE** = the foam can still stick and glue on a second surface, pay attention.
   - **Tack-Free Time** = the time from when the system becomes “tack-free” that is, no longer sticky.

   End of “Adhesive Phase”.
5. **CURING PHASE** = slow reaction development until its completion (12-24 h). Important phase in order to obtain the ideal compression set.
   - **Compression Time** = end of “Curing Phase”, chance to assemble and press the gasket.

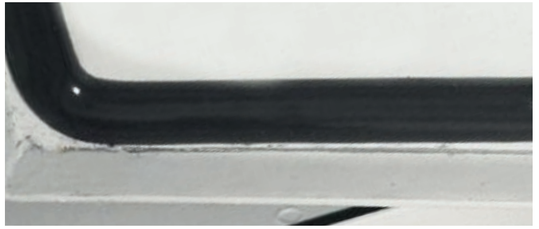
Polytix 30.11 – Polyflu Gasket Properties

COLOR	Black, white as standards. All others upon request.
HARDNESS	From 10 Shore 00 to 60 Shore A possible.
TEMPERATURE RESISTANCE	From -40°C to +100°C (short time up to +160°C).
DENSITY	From 120 g/l to 640 g/l.
COMPRESSION SET (ASTM / DIM TEST)	< 5% at 80/90°C.
STRENGTH FOR BREAKING POINT	3 daN with standards formulation. It can increase and decrease with particular formulations requests.
CURING TIME	• Cream Time: from 18 to 50 sec. • Tack Free Time: from 3 to 8 min.
IP PROTECTION	From IP 50 to IP 67.

Some properties contained in this table are generic. Polytix 30.11 series and Polyflu 10 series contains different formulations with different technical specifications, according to the final application. Technical data sheets of every product are available upon requests.

Electrical enclosures

In this sector, as well as the one of electrical components, it is important that the gasket can protect electrical parts from water, dust and every possible harmful external agents.



Lighting

Poly.Tec offers different solutions for the lighting sector, both related to internal and external lighting, with resistance to hostile weather conditions.

Automotive

In one of the largest and demanding sector, Poly.Tec is offering performing and quality products for years.

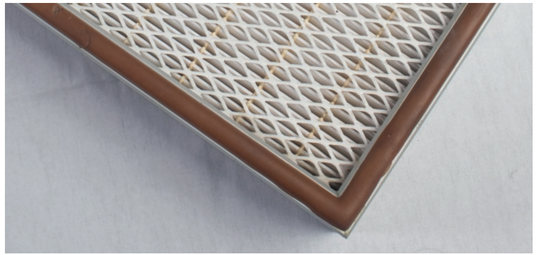
White goods

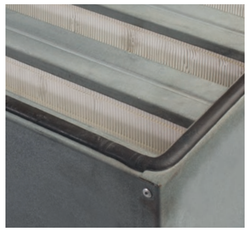
Poly.Tec satisfies all various requirements required by this sector, where the gasket has to resist to different agents, like water, and a wide range of operating temperature.

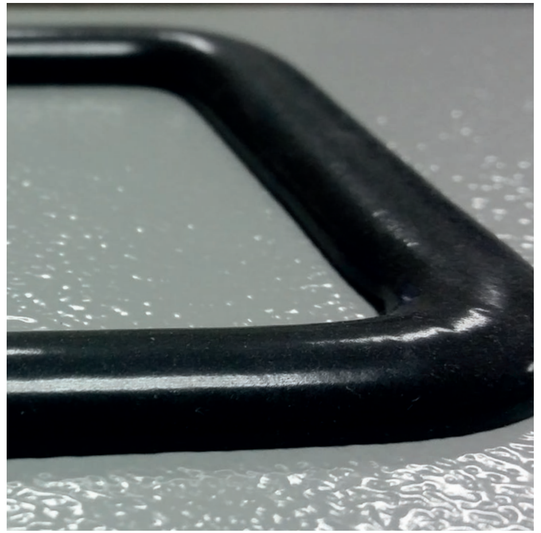
Other industries

PACKAGING, MACHINERY, ELECTRONICS, FILTERS

Poly.Tec is committed to listen all needs and different specifications in order to offer the best possible solution to every customer operating in every sector of interest.







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