



## Injection Molding

# French-Italian Partnership towards more Sustainable Molding

By progressively replacing hydraulic injection molding presses with 100% electric or hybrid injection molding machines, the partnership between Billion and Techpol leads to more sustainability in injection molding.

**F**rench manufacturer of injection molding machines Billion SAS has long experience in the Italian plastics processing market. Numerous plastics processors in this country have chosen Billion machine ranges, available from 40 to 1100t in single and twin-shot versions, and dedicated to many application sectors.

Techpol Srl, based in the Marche region of Italy, is a major Billion customer. It is a leading company in the design and injection molding of thermoplastics. The company ranks among the top suppliers of the world's major car manufacturers, and is also active in other sectors such as the electrical or fitness industries.

For several years now, Techpol has given the utmost importance to all activities that give a concrete demonstration of respect for the planet.

### *Alternative Materials Deriving from Post-Industrial Use*

The increasing use of eco-sustainable raw materials deriving from post-industrial use is one of the means implemented: over the last four years. Techpol has carried out continuous research into alternative materials deriving from post-industrial waste to be used within the limits of the customer's specifications. This perspective is more and more shared by the entire supply chain, and suppliers are also making increasing efforts to offer materials of the highest technical quality and purity, even though they derive from post-industrial use. The most suitable material for this type of use is PA and PP circular compounds, such as Technyl 4earth from Solvay or Hostacom RC from LyondellBasell.

For this material, Techpol, by agreement with the final customer, has already put into production articles using PA



A Billion Select 2 twin-shot 400 T injection molding machine at the Techpol factory. © Billion

deriving from the recycling of airbags, or material deriving from the recycling of nylon stockings. As stated in a press release, the results were excellent at the production level. This process is having an ever greater impetus as regards the life cycle of the single product.

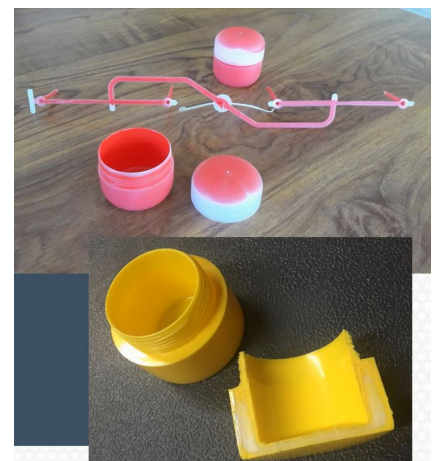
These recycled materials are used for technical parts, molded and subsequently welded with ultrasonic technology, for automotive application.

Rigorous production waste management also yields benefits for the circular economy: in the injection molding of polymers, material waste is generated mainly during the machine setup and start or restart of production. Therefore, they are reground directly next to the press machine with special granulators and reused in the production of parts where the regrind material is allowed in small amounts (mainly PP and PA).

### *Progressive Replacement of the Machinery Fleet*

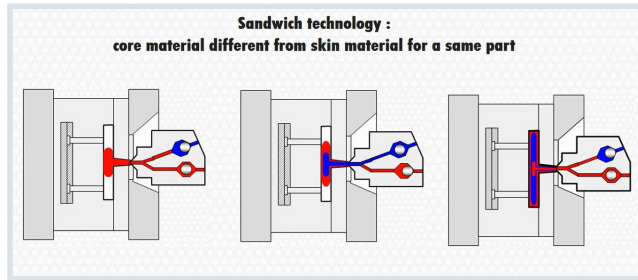
Regarding sustainability issues in its production workshops, Techpol undertook the calculation and progressive mitigation of the carbon footprint in

2021. Among the carbon emissions examined every year at Techpol are the indirect emissions released into the atmosphere, associated with the consumption of purchased electricity or use of heating and cooling. In the injection molding sector, the main contribution to emissions is represented by the electricity consumption. A calculation has demonstrated that electricity consumption is responsible for 96% of total



At Plast 2023, Billion presents e.g. a sandwich cosmetic part. © Billion

Schematic illustration of sandwich technology. © Billion



emissions generated by the injection molding process.

In order to keep the electricity component under control and reduce it over time, one of the strategies implemented at Techpol's factory is the installation of an energy measurement system and the progressive replacement of the machinery fleet.

In this spirit, the strong partnership with the injection molding machine manufacturer Billion, which was initiated a long time ago, plays an essential role and helps the company in achieving this constant environmental objective, by progressively replacing hydraulic injection

molding presses with 100 electric or hybrid injection molding machines.

Alessandra Romagnoli, Techpol CEO says: "In addition to modernizing and making the working environment safer with the latest generation of machines, this measure also allows for a 50 percent reduction in hydraulic oil consumption and a reduction in the carbon footprint of up to 30 percent."

On a larger scale, Techpol management also conducts measures aimed at sustainable production in many other fields: the installation of photovoltaic systems or the plot of about half a hectare for the planting of olive trees (which

have a large CO<sub>2</sub> absorption capacity) near the company area, are other examples of this commitment. ■

## Info

More Information:

[www.tech-pol.com](http://www.tech-pol.com)

[www.billion.fr](http://www.billion.fr)

### Plastics Discovery Tour

The Plastics Discovery Tour is a joint campaign of VDMA Plastics and Rubber Machinery and Plastics Insights.

**Plastics  
Discovery Tour**

[www.plasticsinsights.com/plastics-discovery-tour](http://www.plasticsinsights.com/plastics-discovery-tour)