



The first eco-sustainable polyurethane foam mattress produced from the recovery of materials of vegetable origin Wouldn't this be nice?

Shell Chemicals Europe B.V., Pelma and Gruppo Industriale Buoninfante investigate the opportunity to produce a mattress from used cooking oils through mass balance principles, celebrated with an installation at Superstudio in via Tortona

Shell Chemicals Europe B.V., one of the world's leading chemicals suppliers, **Pelma**, an Italian manufacturer of flexible polyurethane foam, and **Gruppo Industriale Buoninfante**, a company that produces mattresses of Made in Italy excellence, celebrated this intent for a step towards a more sustainable future at Superstudio "**Sustainability Engagement**"; taking visitors through a sensorral and immersive experience to tell the journey of using **biocircular** raw material, recycled from used cooking oil, in the production of polyurethane foam through broadly accepted mass balancing principles. This foam becomes an essential component in the realization of the "sustainable mattress". The installation project, inside the Gallery area in via Tortona 27, interprets the theme of circular economy: a large platform on the ground creates a dynamic volume made of shaped polyurethane foam blocks. The large wall is resolved with shaped elements in polyurethane with variable sections that give three-dimensionality and dynamism to the entire installation and contain the space dedicated to the story of the bio-circular supply chain. The story begins with the production of biocircular polyol, obtained from recycling used cooking oil, and explains the concept of mass balance through graphics and images. From the resulting polyol, a polyurethane foam is generated, which has the same physical-mechanical characteristics of the product obtained from conventional raw materials, with which, in the end, the more sustainable mattress is made.

Flexible polyurethane foam is the **comfort material par excellence** used in seats, pillows and mattresses. It is obtained through the reaction of two main chemical components: **polyol and isocyanate mixed with water** and with the addition of small amounts of catalysts and additives that contribute to determining specific characteristics of the material. The **percentage of polyol in polyurethane foam is very high** and can vary between 60 and 70% depending on the different formulations.

Shell Chemicals will provide Pelma with ISCC PLUS certified bio-circular polyol with each supply, providing the **exact same properties** as the product obtained from conventional raw materials. The International Sustainability and Carbon Certification (ISCC) is an independent, third-party verification organisation that tracks each step of the value chain, from the sourcing of sustainable resources to the manufacture of final products.

For the first time in Italy this polyol **will be used by Pelma**, one of the most qualified Italian producers of polyurethane foams, for the production of the new **Bio Circular** polyurethane that uses **biocircular polyol**. The **Bio Circular polyurethane** retains the same physical-mechanical characteristics as conventional products, but **with a significant reduction of the product carbon footprint**.

Pelma is the only Italian manufacturer of flexible polyurethane foam, and among the top 4 in the world, **equipped with VPF technology** - Variable Pressure Foaming - which uses vacuum and pressure as process variables, without any use of blowing agents harmful to the environment.

The Buoninfante Group has always been committed to acting in an **eco-sustainable way**, with a rigorous management of energy resources, raw materials and waste materials, and through the **CIRCULIFE** project



has decided to intensify its efforts in a circular economy involving the company in every sector and in every process, to reduce the levels of resource consumption and promote the use of raw materials from responsible sources.

The intent to use **Pelma's biocircular polyurethane** for the production of mattresses will allow the Buoninfante Group to **further improve the ecological proposal of the X-Bio Circulife mattress**, which recently obtained the prestigious Elected Product of the Year 2023 award. **X-bio Circulife** is the first mattress made with the upholstery obtained from recycled plastic bottles and now **its sustainability will be further enhanced** thanks to the use of polyurethane obtained from the recovery of used oils and materials of vegetable origin.

"This "circular" approach is the first step towards the production of an increasingly sustainable polyurethane declares **Marco Pelucchi CEO of Pelma** - Polyurethane is still an irreplaceable material for its characteristics and the vastness of the applications but the global approach of the entire production process is important: the management of energy resources, the optimization of raw materials, the rationalization of waste and, more generally, the reduction of the Carbon Footprint. The research goes on and soon it will be possible to recover raw material for our productions also directly from plastic"

"For some time we have decided to invest in a new circular model - says Enzo Buoninfante, **CEO of Gruppo Industriale Buoninfante** - We aim to reach, by 2025, the goal of 100% eco-sustainability through our philosophy of "**Reduce – Reuse – Recycle**" which aims to reduce the levels of consumption of resources, promote the use of only materials from responsible sources and recover materials to which it is possible to give a second life".

Among other things, Buoninfante is also present at the Salone del Mobile in Rho **Stand L09 – L11 / Hall 24** where it will exhibit the latest in innovation and technology to support environmental sustainability and physical well-being of the person.

Shell Chemicals

Shell Chemicals has been helping its customers achieve their business goals for more than 90 years. Its five integrated Energy and Chemical Parks combined with its Chemicals only facilities can reliably provide custom solutions at scale around the world. Chemicals shape the everyday for people and families around the world providing materials for cleaning supplies, furniture, mattresses, cars, personal care products and more.

Pelma

One of the most qualified manufacturers Italy in the production of flexible polyurethane foam in Italy. Founded in Bassano Bresciano in 1962, it is at the forefront in the production of a wide range of polyurethane foams with different physical-mechanical characteristics and fire behavior, able to meet the different needs of the market. Always attentive to sustainable development, Pelma has installed the VPF (Variable Pressure Foaming) system, unique in Italy, which avoids the use of blowing agents during production, and has equipped the plant with a photovoltaic system that covers 70% of energy needs

Buoninfante Industrial Group

The company was founded in the province of Salerno in 1975, as a small family-run business. With time, experience, professionalism and competence of its collaborators has become a solid entrepreneurial reality in the Italian sector, for production levels and quality standards. A reality in continuous ferment, constantly looking for innovative solutions to improve people's well-being, excel in the comfort of rest and offer its customers new solutions, built on their most personal needs. To meet the demand of an increasingly vast and heterogeneous



Buoninfante

market, the company uses a cutting-edge production and logistics system, a flexible and streamlined organizational structure, careful and constant marketing analysis, as well as a continuous service to customers in the pre and post-sales. Gruppo Industriale Buoninfante is one of the leading companies in Italy for the production of mattresses, at the same time it has a strongly international vocation: a substantial share of its turnover is in fact produced on foreign markets. The company has offices located in different parts of the world: New York City and Las Vegas for the American market, Hong Kong for the Southeast Asian markets. Today the company is a constantly growing reality, which offers work to over 150 employees in its plants and indirectly, through the related industries, to over 500 workers.