

PLIXXENT.

Polyurethane is a synonym
FOR PERFORMANCE



THIS IS PLIXXENT.

EUROPE'S LEADING INDEPENDENT POLYURETHANE (PU) SYSTEM HOUSE

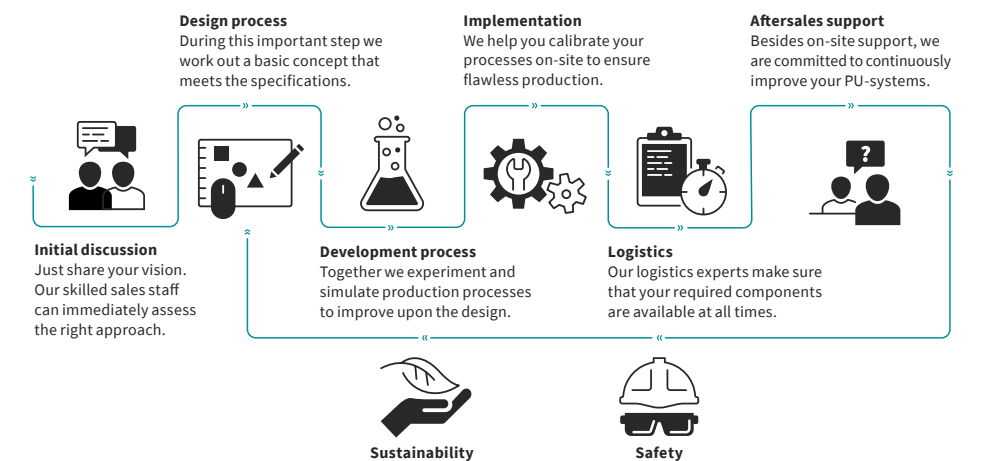
Polyurethane – We love it and we live it!

Each and every day, we are inspired by the great versatility of polyurethanes. We develop and improve innovative PU formulations for our customers with passion and dedication. What fascinates us most is helping our customers to simplify processes and make their products even more successful. Our expertise in the development and processing of polyurethanes, independent raw material procurement and a European team with decades of experience make us an excellent partner.

PLIXXENT IS YOUR PARTNER FOR INNOVATIVE PU SOLUTIONS

As a flexible company, PLIXXENT develops polyurethane systems that meet your needs. No matter how special or unusual your product requirements are. We very much look forward to working with you to find the right solution for your requirements.

WE BELIEVE IN WORKING WITH CLIENTS, INSTEAD OF JUST FOR THEM.



Partner on equal footing:

The development of customized polyurethane systems is a complex matter. We support our customers throughout the development process with individual technical and commercial service.

On-site service:

We support our customers in their local language and offer them on-site technical service. In addition, we train users in PU processing and the safe handling of PU raw materials.

Reliable and flexible production:

Whether for packaged or bulk delivery – our production flexibly adapts to customer needs. We deliver the required quantities quickly, reliably and on time.

In-house development department:

Our development department specialises in innovative and sustainable PU systems for new applications and markets.

In-house technical center:

We know our customers' processes – thanks to our technical center. There, we recreate common PU processing methods for optimum customer service.

In-house test laboratory:

Precise knowledge of material behavior is indispensable for component calculation and development. In our test laboratory, we therefore determine the most important characteristic values of PU systems for our customers.

**PLIXXENT IS YOUR PARTNER
FOR JOINT SUCCESS!**

POLYURETHANE SYSTEMS FOR EVERY STEP

From everyday footwear to demanding professional applications, PLIXXENT polyurethane systems offer the flexibility to meet a wide range of requirements. Our portfolio covers four key categories: Work & Protective, Non-Athletic, Athletic and Various, providing versatile solutions for diverse footwear designs and performance demands. Different densities, hardnesses and material properties allow solutions to be tailored to the specific needs of each footwear application.

WORK & PROTECTIVE



PU sole systems for safety footwear - engineered for durability and comfort.

SAFETY SHOES

PLIXXENT polyester systems offer high-performance solutions for both mono- and dual-density safety footwear. Different processing technologies ensure flexible and reliable production, while special features allow the systems to be adapted to demanding applications and customer-specific requirements. Bio-based and CO₂-blown solutions further extend the range of available technologies.

KEY BENEFITS

- High mechanical properties
- Mono- & dual-density solutions
- Antistatic and ESD options
- Bio-based options
- Heat- & flame-resistant options
- Lightweight options
- High rebound solution

BOOTS

Polyester-based systems cover the complete Wellington boot structure – from outsole and midsole to the boot leg. High mechanical properties combined with antistatic and ESD options make them suitable for demanding applications.

KEY BENEFITS

- Outsole, midsole & boot leg solutions
- High mechanical properties
- Antistatic and ESD options
- Application-specific densities



Integrated PU solutions for the outsole, midsole and leg of Wellington boots.

NON-ATHLETIC

FASHION & CASUAL

PLIXXENT systems combine excellent mechanical properties with outstanding bending flexibility. A broad range of density and hardness provides versatile solutions – from durable monosoles to lightweight, high-rebound applications.

KEY BENEFITS

- Excellent mechanical properties
- Excellent bending flexibility
- Lightweight options
- High rebound
- Wide density & hardness range



We offer lightweight PU-soles with high flexibility and resilience for everyday footwear.

SLIPPERS & SANDALS

Polyester- and polyether-based systems provide flexible solutions for mono- and dual-density applications. Water-blown formulations combine good mechanical properties with a wide hardness range and can be used in combination with other materials such as wood or textiles.

KEY BENEFITS

- Mono- & dual-density solutions
- Wide hardness range
- Good mechanical properties
- Compatible with several other materials



PU systems can be combined with wood, cork and textile components for flexible sandal and slipper constructions.

CLOGS

Polyester- and polyether-based systems provide robust mono-density sole solutions for clogs. Different formulation options offer flexibility in processing, while high mechanical properties ensure reliable performance for demanding applications.

KEY BENEFITS

- Mono-density solutions
- High mechanical properties
- Polyester & polyether options
- Flexible formulation options



Durable mono-density PU sole solutions for lightweight, hard-wearing clogs.



ATHLETIC



PLIXXENT athletic sole solutions provide excellent resilience and cushioning.

RUNNING & SPORTS

Lightweight and high-rebound systems provide versatile solutions for athletic footwear. Different densities and hardnesses combined with good mechanical properties enable materials to be tailored to performance requirements.

KEY BENEFITS

- Broad range of density and hardness
- Good mechanical properties
- Ether-based solutions



PU outsole and lightweight midsole solutions for demanding trekking and hiking footwear.

TREKKING & HIKING

PLIXXENT polyester- and polyether-based systems provide high-performance solutions for demanding trekking and hiking footwear. Outsole and lightweight midsole options combine high mechanical properties with flexible processing possibilities.

KEY BENEFITS

- Outsole & midsole solutions
- High mechanical properties
- Lightweight midsole options
- Polyester & polyether systems
- Antistatic & ESD options



VARIOUS

INSOLES

Low-density, water-blown polyether systems provide a broad hardness range together with good mechanical properties and excellent mould-filling behaviour. Special features such as high rebound, antistatic performance and ESD allow further customization.

KEY BENEFITS

- Low density
- Wide hardness range
- Good flowability
- High rebound options
- Antistatic & ESD options



Low-density, water-blown PU systems for comfortable, high-rebound insoles.

TPU-OUTSOLES

TPU systems provide durable outsole solutions for sports footwear. Their high abrasion resistance, tear strength and flex durability make them well suited to demanding applications.

KEY BENEFITS

- TPU technology
- Designed for outsoles
- Good mechanical properties
- Easy to process
- ESD options available



Durable TPU outsoles engineered for abrasion resistance and flex performance.

POLYURETHANE IS ESSENTIAL

Polyurethane is the material of choice for the production of durable and high-quality shoe soles. We at PLIXXENT make the most of it by using sophisticated technologies. No matter what applications you want to serve – work with us to develop next-generation products.

PLIXXOPOL FOOTWEAR POLYESTER SYSTEMS

In safety questions nothing should be left to chance. All shoe sole systems on the market have to fulfill a variety of safety requirements, before they can be used in the designated field. With polyurethane it is easy to meet these needs.

	Outsole		Midsole
Properties	Microcellular	Compact	Foamed
Density [g/L]	950	1,150	380
Hardness [ShA]	70	70	40
Tensile Strength [MPa]	23	30	3
Elongation At Break [%]	600	675	350
Tear Resistance [kN/m]	25	32	8
Abrasion Loss [mm³]	61	50	
Bending [# of cycles]	> 30,000	> 30,000	

PLIXXOPOL FOOTWEAR HIGH-REBOUND SYSTEMS

Thanks to the input of high-quality raw materials, we have constantly developed our new high rebound materials to reach rebound values of > 50 % .

Properties	Outsole	Midsole
Density [g/L]	1,150	440
Hardness [ShA]	75	48
Tensile Strength [MPa]	25	4
Elongation At Break [%]	640	440
Tear Resistance [kN/m]	25	10
Abrasion Loss [mm³]	48	–
Rebound [%]	> 55	50

IT’S PERFECT. NOW LET’S MAKE IT ECO-FRIENDLY

After the production of shoe soles, polyurethane impresses with its outstanding properties: comfort, flexibility, durability and low weight. Step by step, we are moving closer to our goal of making the production of shoe soles more environmentally friendly. In just six months, our chemists and engineers have developed a product for our shoe sole systems that consists of up to 83 % bio-based raw materials.

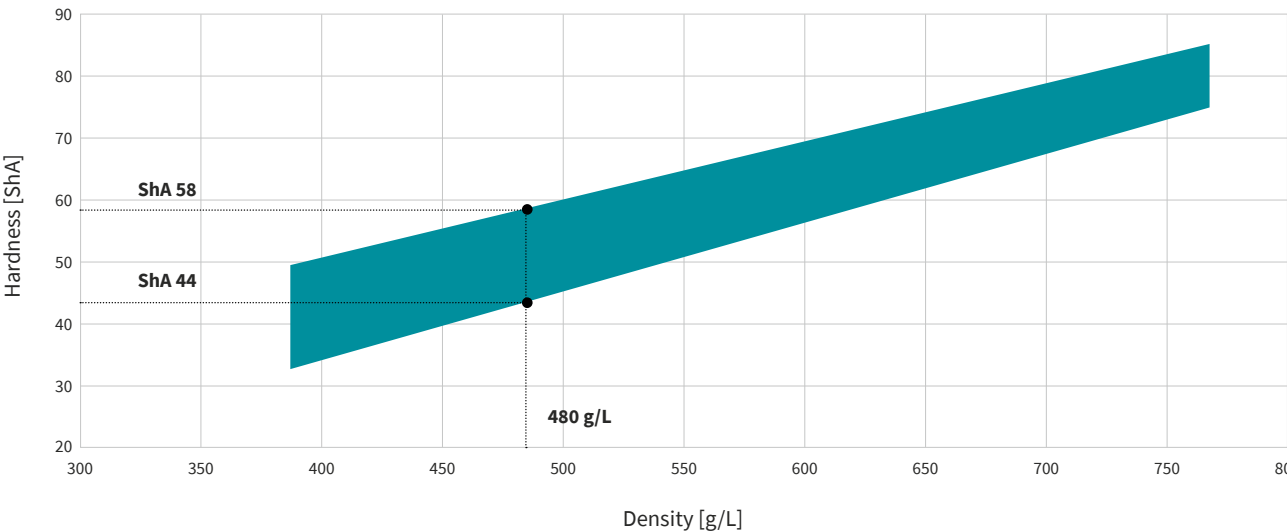


PLIXXOPOL FOOTWEAR ETHER SYSTEMS: ONE PU FITS ALL

The necessity for a wide range of mechanical properties is just as large as the variety of shoe models in the market. Wouldn’t it be great to cover all these needs with just ONE PU formulation. For this purpose, we have developed a new product generation of polyether systems, which allows you to do exactly that. One polyol and one isocyanat covers a wide range of densities and the hardness can be adjusted by simply adding an additive – if needed. This optimizes your process and contributes to cost savings and faster cycle times.

	PLIXXOPOL FA 4920W015		PLIXXOPOL FA 4920W015 + PLIXXOADD N4001X		
Density [g/L]	440	650	400	420	660
Hardness Max. [ShA]	50	65	55	60	80
Rebound [%]	35	35	35	37	41
Tear Resistance [kN/m]	6.7	9.6	7.0	8.2	13.4
Tear Strength [Mpa]	2.2	3.2	2.2	2.6	4.2
Elongation At Break [%]	250	240	240	230	220
Abrasion Loss [mg]	50	50	–	50	50
Abrasion Loss [mm³]	110	75	–	125	80

DENSITY/HARDNESS RANGE OF PLIXXOPOL POLYETHER SYSTEMS





SUSTAINABILITY IS PART OF OUR DNA

Climate change is one of the most significant challenges facing humanity. At PLIXXENT, we take responsibility for meeting this challenge with innovative and sustainable processes, materials, and solutions, thus contributing to a future worth living. We work daily to create sustainable polyurethane formulations that pave the way to climate neutrality – for us and our customers.

Pure³ SOLUTIONS

POLYURETHANE SYSTEMS FOR A BETTER TOMORROW

Polyurethane is one of the most versatile materials suitable for various applications. Every year, twenty-three million tons are used worldwide to manufacture products. And consumption is expected to rise sharply. But like all synthetic materials, it is mainly produced from fossil sources. Or rather, it was.

Pure³ Solutions offers its customers a new range of high-quality polyurethane systems made from up to 94% reused, recycled and/or renewable raw materials for every application - whether flexible, rigid, foamed or compact.

In manufacturing and processing our sustainable polyurethane systems we rely on three main pillars regarding the raw materials and the production processes.

Pure³ SOLUTIONS



reduce

We are reducing the amount of fossil raw materials by using renewable, natural ones, e.g., producing polyols from plants and offering ISCC + certified mass balanced systems. In addition, we focus on energy and CO₂-saving production processes, both through the use of green electricity and certified natural gas at PLIXXENT, as well as through product design that reduces energy consumption in our customers' production.



recycle

There are currently only a few processes for recycling polyurethane, although the material is precious compared to other synthetic materials. With other high-class industrial partners and research partners such as the Danish Technological Institute and Aarhus University, we are tackling this problem with the PURfection research project funded by the Innovation Fund Denmark.

PURfection focuses on establishing a circular economy for polyurethane products. The aim is to break down polyurethane into its original building blocks and then use these directly as resources for producing new polyurethane on an industrial scale – avoiding landfills and drastically reducing the overall carbon footprint of the PU industry.



reuse

To minimize waste and achieve product circularity, we use recycled, end-of-life industrial and natural materials to produce our Pure³ solutions.

One key benefit of our bio based system: Compared with standard systems there is no loss in properties or processing behavior. Both enable ESD safety, light weight, high rebound properties and a lot more.

>> BIG IN EUROPE

📍 Headquarters

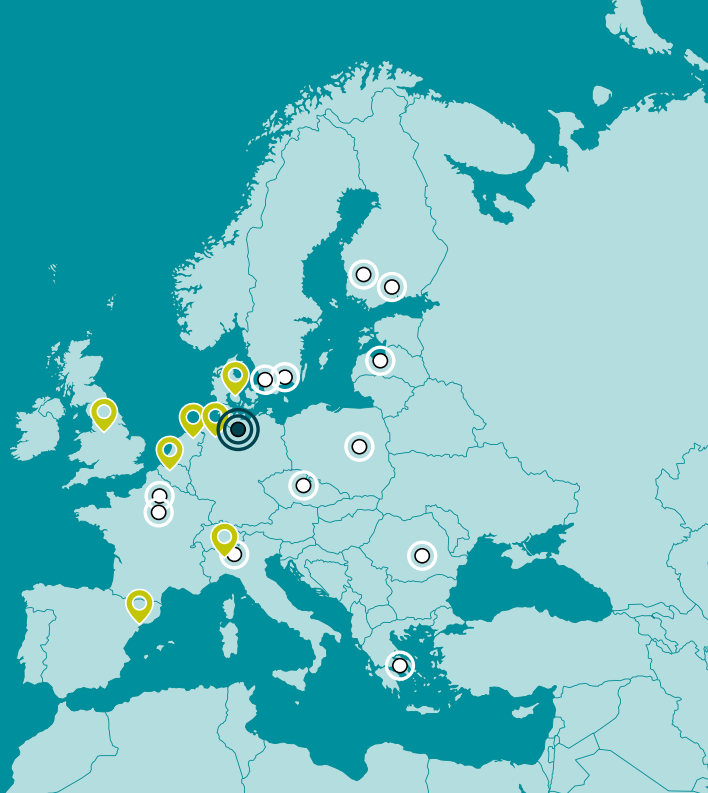
- Germany: Hamburg

📍 System houses

- Belgium: Gent
- Denmark: Randers
- Germany: Oldenburg
- Great Britain: Macclesfield, Cheshire
- Italy: Busto Arsizio
- Spain: Tarragona
- The Netherlands: Foxhol

📍 Sales locations:

- Belgium
- Czech Republic
- Finland
- France
- Greece
- Latvia
- Poland
- Romania
- Sweden



PLIXXENT provides innovative technologies based on polyurethanes.

Specialising in standard as well as tailor-made systems, we accompany our customers throughout the entire value chain – from the initial consultation to the aftersales support.

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