



QUALIFIED PRODUCTION  
DIEPHOLZ  
HIGH LOAD-BEARING FOAMING PRODUCTS INTERNATIONAL

**P+S** QUICK-RESPONSE PROFESSIONAL  
HIGH PERFORMANCE  
VULKOLLAN

**POLYURETHANE**

SYSTEMATICAL GUIDANCE DIEPOTHAN PLANNING  
COMPETENCE RESILIENCE DISCIPLINED  
PURPOSEFUL MOULDING PUR SOLUTION-ORIENTED

VERSATILE CUSTOMER-ORIENTED EXPERTISE **ELASTOMERS**

INDUSTRY VIBRATION DECOUPLING  
MULTI-APPLICATION SERVICE OPTIMAL  
POLYURETHANE SYSTEMS  
RELIABILITY

LONG-LASTING **VULKOCELL**  
CAPACITY COMPACT  
PERSISTENCE

**DIEPOCELL** FLEXIBLE COMPETENT

HIGH-QUALITY DYNAMIC  
**DIEPOLAST**

FAST PRECISE  
INNOVATIVE FOAMED INDIVIDUAL



# RELIABLE PROBLEM SOLUTIONS WELCOME STRATEGIC PARTNER INNOVATIVE POTENTIALS AT OUR SITE

EXPERIENCE AND EXPERTISE PRECISION

We are delighted at your interest in our work and will give a comprehensive insight into the wide and varied range of services of P+S Polyurethan-Elastomere GmbH & Co. KG.

The history of our company dates back to the year 1972. In those days the main focus of our activities was in the production of thermoplastic injection moulded parts and polyurethane foam elements. Shortly afterwards, we started a pilot plant for the manufacture of constructional elements made

of cellular and solid polyurethane elastomers for high stress applications. It turned out to be a very decisive step towards the future and was a significant influence on the company's strategic development over the coming years.

We continued to extend our activities in the area of PUR manufacturing until 1992 when we clearly positioned the company P+S Polyurethan-Elastomere GmbH & Co. KG as sole manufacturer of technical components made of solid and foamed polyurethane systems.

Since then, our products have become known as problem solvers for a large number of manufacturing branches – with ever increasing areas of application. Around the world many companies rely on our PUR elastomers and appreciate the comprehensive support and advice of our experts. In other words, we are known as a supplier of complete quality solutions.

All our activities along the entire value chain are characterized by an optimum level of economic efficiency and environmental sustainability. Our PUR systems are not manufac-

tured in large scale series – on the contrary, we usually produce small and medium series of up to 100,000 pieces. On request we willingly develop and manufacture custom-made single pieces with very special features for very specific applications.

We share long term cooperations with many of our business partners but again and again our circle of customers gets extended by new companies and their inherent challenges. The entire work at our enterprise is characterized by creative solution competences and distinctive knowledge of the trade, completed by consequent adherence to schedules and thorough service orientation.



These attributes form the essential components of the P+S corporate culture which is entirely converted into daily practice by the whole staff, making us well equipped to face the future.



KNOW HOW TRANSFER

CUSTOMER BENEFIT

# DEVELOPMENT

PRODUCT OPTIMIZATION  
CREATIVE THINKING

Materials made of polyurethane provide state-of-the-art system solutions for numerous industry branches and play an indispensable role in the global economic life of the twenty-first century.

On all continents we can observe a continuously increasing demand for our high performance, maintenance-free PU components which are expected to master more and more complex challenges.

Due to this, the daily commitment of our Research and Development team is of great importance. Furthermore, the proven versatility and exceptional innovative potential of our polyurethane elastomers

- Vulkollan®
- Diepocell®
- Diepothan®
- Diepolast®
- Vulkocell®

provide a very favourable basis for our targeted working processes.

The first step in developing a product solution is the drawing up of a requirement profile. This includes the definition of the application area and the expected manner of stress as well as environmental influences like temperature, humidity and contact with grease, oil or cleaning agents.

Based on these findings, we initiate the specially tailored creation of the recipe together with the calculation

and constructive design of the required component.

The work of our R&D team is based on both creative thinking and many years of experience – this combination has proven to guarantee appropriate PUR solutions with optimal profiles of properties.

We will happily provide more information if required.



BASIS OF TRUST

BRANCH EXPERTISE

# TEAM SPIRIT

LOYALTY

PERFORMANCE-MINDED



## THE HIGH-PERFORMANCE CLASSIC

# VULKOLLAN®\*

## FOR HIGHEST DYNAMIC STRESS



Given the numerous application areas of PUR systems, Vulkollan can surely be considered a real piece of fortune. For a long time, this solid polyurethane elastomer has been the embodiment of highest performance – due to its substantial mechanic and dynamic material characteristics. The main components of Vulkollan consist of a polyesterpolyol and a diisocyanate.

Special cross-linking agents are individually added to obtain the requested material characteristics.

The primary materials for the production of Vulkollan are carefully specified and verified in extensive controls, in order to assure at any time a uniform elastomer quality at the highest level. Vulkollan castings and components are used in all areas where maximum wear and tear resistance is needed and mechanical reliability under stress is of utmost importance.

\* „VULKOLLAN®“ is a registered trademark of Covestro Group

### At a glance: the profile of properties

- excellent mechanical wear and tear resistance
- good impact resilience, even with hard specifications
- high tear propagation resistance
- low compression set
- hardness Shore A 75-97
- good resistance to mineral oil, grease, petrol and various solutions
- good resistance to ozone as well as to ultraviolet and energy-rich radiation
- temperature range -40 °C to +120 °C
- special qualities approved according to LFGB (Food, Commodities and Feed Code)
- hydrolysis resistance





BEST SOLUTION EXPERTISE

# DIEPOTHAN®

FOR EXTREME LOADINGS

## At a glance: the profile of properties

- outstanding elasticity in the entire hardness range
- free from plasticizers
- strong mechanical and dynamic resilience
- hardness Shore A 45-98 / Shore D 62
- good resistance to mineral oil, grease and petrol
- good resistance to ozone as well as to ultraviolet and energy-rich radiation
- temperature range -30 °C to +80 °C
- special qualities approved according to LFGB (Food, Commodities and Feed Code)
- hydrolysis resistance

Diepothan is another polyurethane elastomer with solid structure, showing a profile of properties similar to Vulkolan. This material has been developed and tailor-made in our laboratories – it offers a very convenient combination of physical and chemical characteristics. As a consequence, Diepothan shows a comprehensive application portfolio

(based on polyester and/or polyether) particularly if extreme challenges have to be mastered. Diepothan castings provide maximum load-bearing capacity and can be found in many areas of mechanical engineering – most of all, when you require low Shore hardness and high, constant elasticity.



## THE COMFORTABLE COMPLEMENT

# VULKOCELL®

## FOR VIBRATION ENGINEERING



Cellular Vulkocell serves as a high performance counterpart of solid Vulkollan. Most of all, this elastomer is used in demanding applications that require very particular material characteristics. As Vulkocell is manufactured with a density of 300–700 kg/m<sup>3</sup>, it is possible to achieve better results of increased deformability and reduced compression hardness than with solid elastomers. The materials show minimal transverse expansion without suffering any damage.

Vulkocell is characterized by a relatively low dampening and a higher dynamic load bearing capacity. All around the world, this advantageous combination of properties is the reason for numerous polyurethane solutions made of Vulkocell – in order to face and resolve many-faceted challenges in the area of vibration technology. For instance, Vulkocell components provide maximum safety, spring and comfort in automotive manufacture.

### At a glance: the profile of properties

- increasing energy absorption with increasing density
- steady compression behaviour
- low permanent deformation under endurance stress (2 Hz, 40% compression)
- high volume compressibility with minimal transverse expansion
- good resistance to mineral oil and grease
- good resistance to ozone as well as to ultraviolet and energy-rich radiation
- temperature range -30°C to +80°C
- hydrolysis resistance variants on request
- special qualities approved according to LFGB (Food, Commodities and Feed Code)





THE IDEAL SOLUTION

# DIEPOCELL®

FOR OPTIMUM DAMPENING RESULTS

## At a glance: the profile of properties

- excellent dampening characteristics
- maximum energy absorption
- steady compression behaviour
- high volume compressibility with minimal transverse expansion
- good resistance to mineral oil and grease
- good resistance to ozone as well as ultraviolet and energy-rich radiation
- temperature range  
-30°C to +80°C
- hydrolysis resistance variants on request
- special qualities approved according to LFGB (Food, Commodities and Feed Code)

Diepocell is another cellular polyurethane elastomer. Its profile of properties shows a considerable resemblance to the characteristics of Vulkocell. Beyond that, this material is especially suitable for particular purposes: PUR systems made of Diepocell give excellent results when components with an incomparable dampening behavior are required, without paying very special attention to the dynamic features of the material.

As with Vulkocell, the Diepocell elastomers are manufactured with a density of 300 - 700 kg/m<sup>3</sup>. They are characterized as well by a high volume compressibility (up to 90 %) with minimal transverse expansion. These attributes make Diepocell a preferred material in the production of buffer elements for cranes, elevators and similar industrial applications.



## OSCILLATION INSULATING

# DIEPOLAST®

## AGAINST SOUND AND VIBRATION



The striking feature of Diepolast is its small-cell elastomer structure. Thanks to the enclosed volume of gas the material shows excellent volume compressibility as well as high imperviousness to short-term static or dynamic stress. Given its beneficial profile of properties, Diepolast can be used for vibration insulation in almost every application as well as for acoustic decoupling.

This high performance PUR elastomer is available either as two-dimensional off-the-roll material or as manufactured spring elements and has successfully been used for years as compression and tension-loaded cushioning, e.g. for machine bearings and in the scope of stage technology.

PUR solutions made of Diepolast are manufactured with a density of 150 to 680 kg/m<sup>3</sup>. Furthermore, it is evidently possible to customize specialities for particular applications with verified densities and cross-linkings.

### At a glance: the profile of properties

- extended area of application for vibration insulation
- excellent cushioning properties up to 30 t per m<sup>2</sup>
- impressive active and passive isolation
- suitable for flat bearings for in-situ concrete construction
- good resistance to mineral oil, grease, dilute acids and alkalis
- high imperviousness to static and dynamic stress





FIVEFOLD  
PERFORMANCE



# P+S STANDARD

WIDE SPECTRUM  
OF APPLICATIONS

CONVINCING  
SOLUTION EXPERTISE

# PROGRAMMES



The five innovative polyurethane elastomers manufactured at our company enable us to promptly provide quality solutions for many applications. Likewise, the proven P+S standard programmes provide a strong and reliable basis for a large number of tailor-made modifications, each of which we design for our customers at any time with great accuracy and quality awareness.

- **Rolls and wheels with Vulkollan coating**

These components provide high dynamic resilience, an ideal compression factor and a distinguished E-modulus.

- **Spherical bearing joints made of Vulkocell**

In use as dust and dirt excluders and for sound and vibration insulation. Auto-lubrication by oil-impregnated seal rings as an option.

- **Plates and rods**

All P+S materials can be delivered in plate and rod form. Rods are available as Vulkollan or Diepothan.

- **Elastomer springs**

For efficient cushioning of moving loads and isolation of vibration elements.

- **Stop buffers**

High dampening capacity and optimum energy absorption with minimal transverse expansion. Suitable for applications in the areas of conveyor systems and general mechanical engineering.

- **Additional springs made of Vulkocell**

Excellent physical and mechanical properties, therefore especially suitable for components exposed to high dynamic stress as used in the automotive construction and engine-

ring industries. Also applied in limited installation spaces, due to minimal transverse expansion and high volume compressibility.

- **Elevator applications**

- Type-examined buffer components
- Guide holders made of break resistant aluminium alloy or glass-fibre reinforced plastics with cushioning inserts
- Rail lubricators and oil collectors
- Roller guides and vibration damping rolls with low rolling resistance
- Cable spring buffers for counterweights as cable-length balance

- **Pressure bars and cutting edges for the paper and printing industries**

Impressive wear resistance and long durability, combined with excellent dynamic properties and outstanding structural strength.



TÜV TESTED

HIGH LOADING CAPACITY

FREE FROM VIBRATION

SAFE AND NOISELESS

# ELEVATOR TECHNOLOGY

LOW FRICTION

For many decades, all kinds of elevator systems have been equipped with high performance P+S materials to assure optimum running results. Whether passenger or freight transportation, our polyurethane elastomers are always tailored to the requirements of the customer. Safety components, moving elements and guiding systems give excellent performance due to exceptional wear protection and outstanding dampening characteristics. We provide type-examined safety buffers even for the smallest of installation spaces and for maximum stress applications. Precise material tests provide the basis for the development and manufacturing of high performance lift buffers. On request they can also be delivered as hydrolysis resistance variants, e.g. for applications in wet areas. Furthermore, we supply guide holders, liners, rail oilers, oil collectors, rolls, roller guides, cable springs, bottom layers and damping plates.



MAXIMUM SAFETY

SMALL SPACE REQUIREMENTS

OPTIMIZED PERFORMANCE

VIBRATION CONTROL

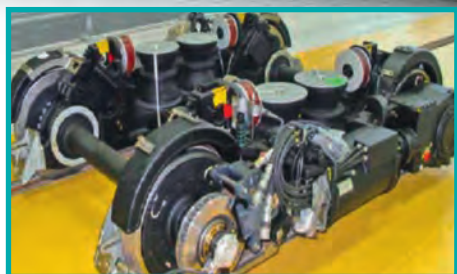
# RAIL VEHICLE TECHNOLOGY

DAMPERS



Our materials make an indispensable contribution to driving safety, user comfort and the warranty of high health standards worldwide – for the benefit of both staff members and passengers.

Elastic bearings and dampening systems give reliable protection against unpleasant vibration effects. Spring systems, rubber springs, torsion bars and bearing bushes provide optimized performances for undercarriages and wagon supports. When finally it comes to efficient vibration insulation in wagon interiors, our customers prefer to rely on Diepolast solutions.



HIGH ECONOMIC SOUNDNESS

SPRING SYSTEMS

WEAR RESISTANT

# AGRICULTURAL INDUSTRY

SEALS

ANTIMICROBIAL

In the agricultural industry, equipment and machine components have to cope with high everyday demands. By means of carefully selected raw materials, our research & development team creates high performance products – also with antimicrobial variants – which lays the foundations for long, maintenance-free operational cycles. We deliver wear resistant axle and drawbar springs, bearing seals, return springs, guide elements, roll coverings, grippers and drivers, funnels and cleaning elements.



TAILOR-MADE

OPTIMIZED DAMPENING

# VEHICLE TECHNOLOGY

DYNAMICS

SILENT RUNNING

HIGH ELASTICITY

Due to their optimized range of properties, our P+S materials are firmly established in the area of vehicle manufacturing – with special emphasis on the development and production of bearing and spring systems for special-purpose vehicles. Additionally, we produce spring systems and seals for fire brigade and waste collection vehicles. In many places, industrial vehicles like forklift trucks run on rails and rollers that are coated with Vulkollan or Diepothan. For the field of trailer construction we deliver bearing bushes and buffers – and our product portfolio is completed by high performance suspension systems and resilient mountings for convertible tops.



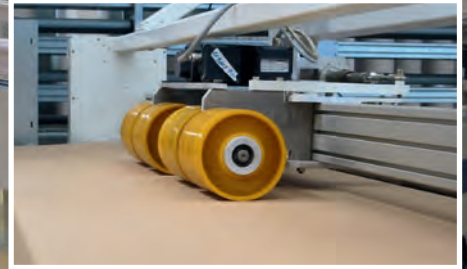
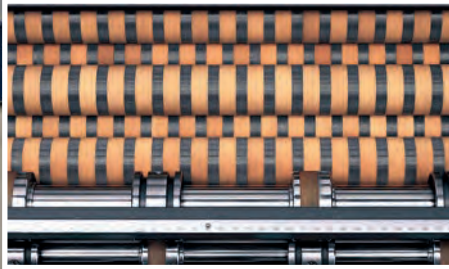
HIGH ELASTICITY      LOAD RESILIANCE

# PAPER AND PRINTING TECHNOLOGY

WEAR RESISTANT      CUT RESISTANCE

ECONOMICAL

Our high performance polyurethanes have proven a good recipe for the development and production of doctor blade systems used in economical coating processes of quality papers. P+S solutions can also be found in the paper processing industry, providing wear resistant coating material for feed and transport rolls, suction rolls and label rolls – as well as for no crush rolls in cardboard production. We also manufacture cutting sticks of outstanding structural strength, drive and press rollers, pressure bars and chamber seals, combination blades and clamping elements.



THRILL RIDE WITH COMFORT

SILENT AT RUNNING

HIGHEST SAFETY STANDARDS

# LEISURE TIME

WEAR RESISTANT

PLEASANT DRIVING EXPERIENCE



Whether it is cable cars riding up to dizzy heights or roller coasters thundering down into the deep, leisure facilities of all kinds require maximum everyday safety. As to that, we make our contribution with rolls and rollers coated with Vulkollan as well as with shock absorbing buffers made of Diepothan. In addition, we deliver frequently proved vibration dampers for optimal driving comfort. Our entire product portfolio for the leisure industry provides high quality results even under extreme stress. This is the result of sound development work and intensive test runs, carefully undertaken with the roller dynamometer at our company.



# PIPELINE SERVICE

ANTISTATIC

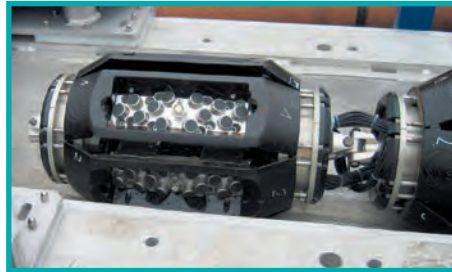
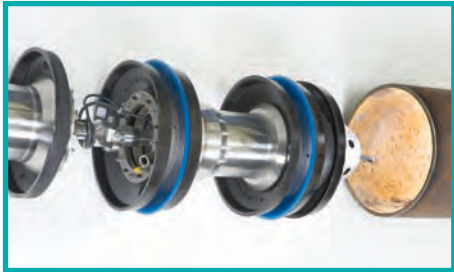
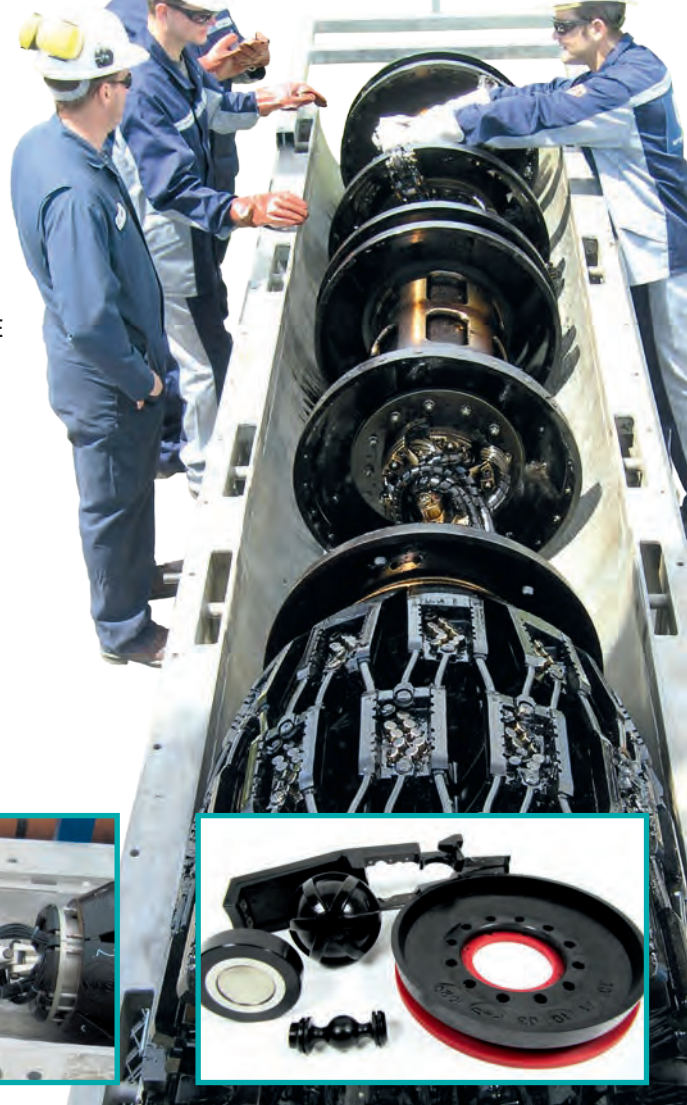
RESISTANT TO TEARING

EXTREME CHALLENGES

PIG DISKS

GLOBAL SOLUTION COMPETENCE

For decades, selected P+S polyurethane solutions have been well established in the area of pipeline service. High resistant pig disks, bearing elements and wear resistance systems are on daily duty on all continents. Our product portfolio also includes guide rollers, scraper and sensor holders – and on special demand we are able to deliver them as antistatic and ATEX conform systems for particular applications. The extraordinary flexibility and very economical production of our P+S materials assure satisfying individual solutions and long service life of all components.



# CRANE SYSTEMS

HIGH VOLUME COMPRESSIBILITY

HYDROLYSIS RESISTANCE

SILENT OPERATION

STOP BUFFERS

STRONG DAMPENING

Crane building, material handling and mechanical engineering are only some of the typical application areas for Diepocell stop buffers. Our products perform day in day out over long periods, even in tropical climates. High energy absorption and an extended spring travel are the reasons for reduced end forces and a moderate braking performance. Rolls and buffers used in cable trolleys provide low rolling resistance, high wear resistance and – not to forget – optimum dampening results.



RELIABLE PROTECTION

SCRAPERS

SOLID OR MICROCELLULAR

# TRANSPORT AND HIGHLY RESISTANT MATERIAL HANDLING

Rails and rollers coated with Vulkollan can be found worldwide as highly appreciated components for smooth transport and conveying processes. In daily use you also find transport devices, impact buffers and scrapers, e.g. for the secure transport of automobile assemblies, furniture parts and machine components. Both in solid and in microcellular version we provide support pole cups, carriage elements, composite parts and pressure pieces. It's also worth noting the increasing significance and greater demand of highly resistant P+S spring systems for conveyor belts and hoppers.



COST OPTIMIZATION

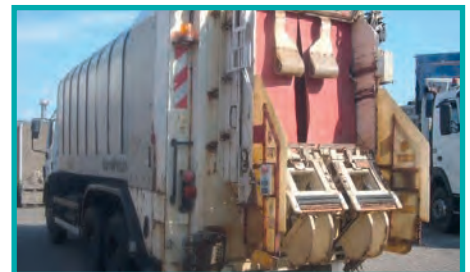
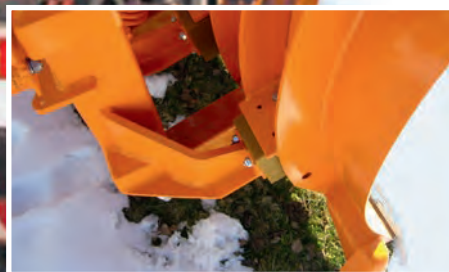
ENVIRONMENTALLY SOUND

## MUNICIPAL SERVICE

PLANNING RELIABILITY

MAINTENANCE-FREE

The fire brigade as well as waste collection and road cleaning services need specially equipped vehicles to cope with very particular requirements. We provide individually developed components made of elastic PUR systems for highly resistant, dynamic applications. In particular, these include products like scraper blades and seals as well as spring and damper systems. Winter road maintenance activities can be efficiently realized using hydrolysis resistant downpipes and mixer bowls made of Diepothan.



Both nationally and internationally the product portfolio of P+S Polyurethan-Elastomere GmbH & Co. KG enjoys a very good reputation in many different areas. This worldwide estimation is also directed to our whole company staff – and it is an everyday stimulus to improve our operating procedures with customer orientation and greatest accuracy.

Quality requirements at our site start with the accurate choosing of the raw materials used to develop our products. By doing this we can be sure our PUR components will demonstrate the appropriate qualities.

The whole manufacturing process of our elastomers is documented and undergoes careful end-to-end monitoring. Modern electronic data processing and precise inspection equipment assure smooth production sequences from goods receipt to final tests and inspection. On request, all relevant documentation and certificates are willingly made available to our customers.



SUSTAINABLE ACTION

CERTIFIED

# TESTING EQUIPMENT

ISO 9001

ISO 14001

QUALITY MANAGEMENT

PRODUCT SAFETY

Before our developed PUR solutions enter manufacturing we usually create an initial sample. This procedure enables us to verify at an early stage the high performance of the corresponding component.

ISO 9001 and ISO 14001 are essential parts of our management system. These internationally recognized standards demonstrate the continuous improvement processes in all departments of our company. Consistently we will keep on caring about these important aspects of our work.

In the interests of environment, in the interests of our customers.





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