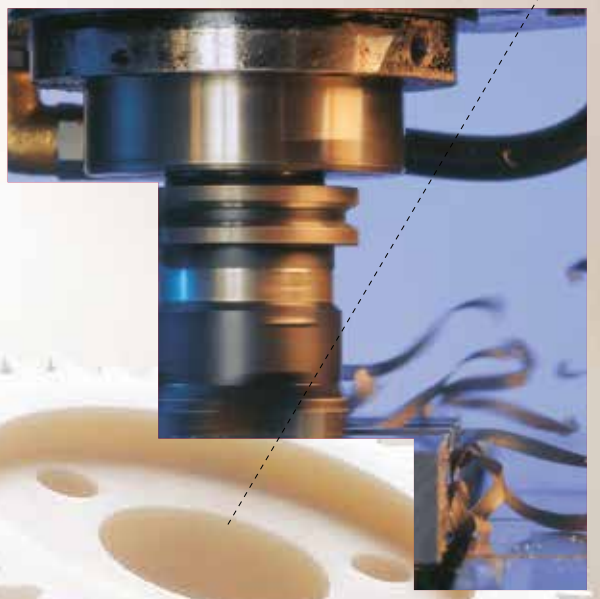
MACHINED PARTS

Fast and cost effective!



LICHARZ engineering plastics –

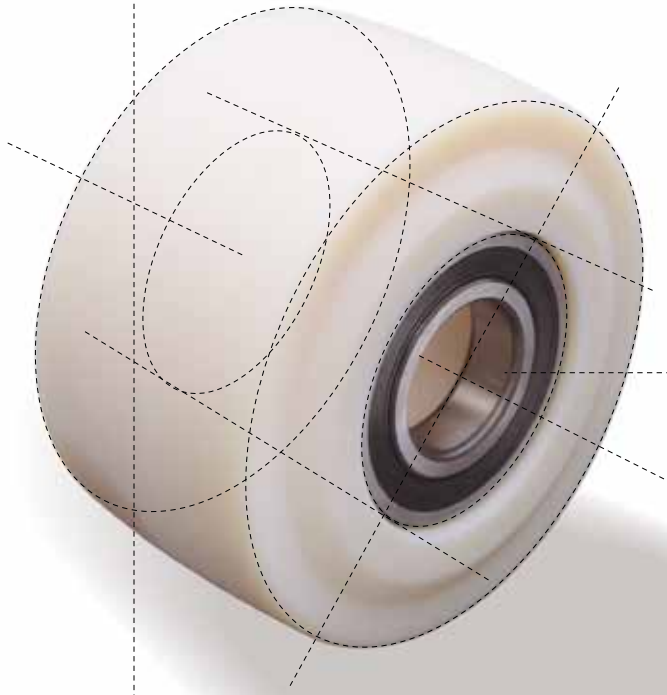
EXACTLY YOUR SOLUTION

Licharz
engineering plastics

Wheel calculation

$$p' = f_w \sqrt{\frac{F}{r \cdot B}} \quad [MPa]$$

F = Wheel load in N
r = Roller radius in mm
B = Wheel width in mm
f_w = Material factor
PA 6 G = 25.4
PA 6 = 38
POM = 33.7



LICHARZ

ENGINEERED COMPONENTS:

We take plastics to the finishing line!

Machinery and equipment design is facing major challenges; customers continually demand faster and more efficient applications. Safety and sustainability are key factors. At the same time cost pressures are increasing. Materials provide a wealth of innovation potential: engineering plastics are often used to replace metal. They can be made into almost any shape with tailored formulas to suit different specific application conditions. Engineered components made of plastic are light, sturdy, durable and very economical to manufacture.

As a manufacturer of high performance plastic parts and components Licharz has been a competent partner for the decision makers and designers in mechanical engineering and drive technology for over 50 years. We can competently advise you on the use of engineered components made of plastic and work with you to develop customized solutions for your machines and equipment.

In this brochure we have compiled an insight into our company and some basic information concerning our product range, the manufacture of engineered components and the plastics used. A few application examples demonstrate specific uses and the benefits of engineered components made from high quality plastics.

PA 6

$$\left[NH - CO - (CH_2)_5 \right]$$

LICHARZ

LICHARZ:

Exactly your solution

In the hands of second generation owners Licharz develops formulas for engineering plastics and is a leading manufacturer of plastic semi-finished goods. We use machining processes to manufacture high-performance plastic components from semi-finished goods for various different industries and markets.

Specialist and all-rounder

Our focus is in the production of **LiNNOTAM** cast polyamide. Developed in-house, it is an extremely solid and durable cast polyamide. In cooperation with partners we manufacture extruded plastics such as POM and PET. With a volume of over 7,000 tons of engineering plastics per year we are among the top manufacturers worldwide. We manufacture on state-of-the art machinery at our 16000 square metre facility located at our headquarters in Buchholz in the Westerwald. Using our manufacturing know-how, hi-tech machining equipment and our many years of experience we manufacture a wide variety of engineered components from all kinds of engineering plastics.

Innovative and uncomplicated
For over 50 years the engine of our growth has been innovation that is closely aligned to the needs of our customers. We rely on our own independent, ongoing materials research and development, because good plastic begins with a good formula. Approximately 250 skilled workers develop and produce reliable products for our customers and ensure a fast and uncomplicated handling process all the way from quotation to delivery.

Totally committed
As a medium-sized family-owned company we rely on non-bureaucratic processes and short communication channels and we are totally committed. Flexibility, integrity, thoughtfulness – these values form the core of our philosophy. Together we develop exactly your solution.

From the Westerwald to the global market
We supply markets around the globe through a dense network of trading partners. We also have our own locations in England and France.


20°
Whether simple or complex – when it comes to processing engineered components we know no limits.

Engineering plastics are high-performance engineering materials for highly stressed mechanical parts such as sliding elements, wheels, guide rollers, pulleys, gears, sprockets and many other types of engineered components. Far removed from the simple plastic product, engineering plastics can be individually adapted to suit specific application conditions. The targeted adaptation of mechanical, chemical, thermal and electrical properties is possible dependent on the source material, manufacturing process and the use of additives such as oils.

For heavy load and sensitive fields of application
As a group of materials engineering plastics boast desirable properties such as high abrasion resistance, breakage resistance and wear resistance, excellent mechanical properties, low weight, excellent vibration damping and high chemical resistance. Plastics are physiologically safe and can therefore be used even in sensitive fields such as medical and food technology. Because plastic components can be easily cleaned they are also very easy to maintain.

LICHARZ

COMPONENTS MADE OF PLASTIC:

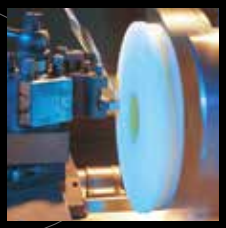
Individual and strong

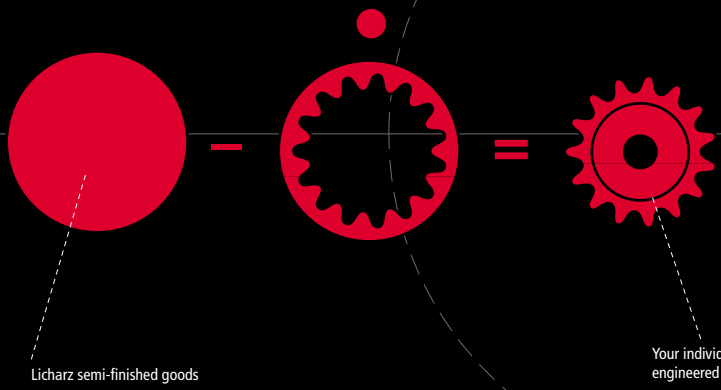
70° 90°

We develop your product together
What parts for your machines can be made from plastic? Which plastic is best for your operating conditions? And what processing procedures give the best result?

We provide you with the technical expertise and work with you locally to check the operating conditions on your machine, check your design drawings, recommend the most suitable material and the machining process, and we manufacture a prototype if required.

As we manufacture your parts from the material to the finished component exclusively on our own equipment, we can guarantee consistent high quality throughout the entire manufacturing process.





LICHARZ

MACHINING:

Fast, precise, economical

Machining enables fast, economical and reliable manufacturing of high precision engineered components.

From wheels to complex 3D machining

We use cutting processes (sawing, milling, grinding, turning, planing, drilling, etc.) to manufacture very stable and durable engineered components that are particularly suited to applications where high friction and wear conditions occur. Through a wide range of processing possibilities we create for you all individual design solutions – from the simple wheel to complex 3D processing.

Manufacturing by experts

Our manufacturing is performed exclusively by experienced, trained staff.
Our application engineers accompany you from the initial concept through to the finished engineered component; you benefit from the experience of our mechanical engineers and technicians in the implementation of engineering solutions using plastic.

Leading from the front in Germany
Our machines are technically equipped to support advanced economical machining processes. More than 60 machines are available for processing your engineered components. The precision machining of different types of plastic is only possible through the precise combination of manufacturing processes, machine, clamping aid and tool coupled with specific manufacturing know-how. We manufacture almost fully automated. Due to our manufacturing and processing capacity we are already a market leader in Germany and can manufacture your engineered components as required in individual pieces, small batches or large scale production.

Precision in any format
Our machines enable a wide range of processing options in different widths and diameters and the manufacture of low and high volume precision parts:

- CNC milling machines, work area up to 3,000 x 1,000 mm,
- CNC lathes, clamping range up to ø 1,560 mm,
- CNC lathes, machining length up to 2,000 mm,

- CNC automatic lathes up to ø 100 mm spindle size,
- Screw machines up to ø 100 mm spindle size,

- Panel sizing saws up to 170 mm cutting thickness and 3,100 mm cutting length,
- Band saws up to ø 800 mm,
- Four-sided planers up to 125 mm thick and 225 mm wide,
- Thickness planers up to 230 mm thick and 1,300 mm wide,
- Profile milling (shaping and molding),
- Eight-axis CNC automatic profile,
- Gear cutting machines for gears from module 0.5 to 1,500 mm diameter.

120° 90°

Quality at every stage of manufacture
Computer-aided quality monitoring continuously oversees our manufacturing processes, and a specially designed 3D measuring system is used for monitoring machining processes. Our test laboratory conducts continuous material testing and testing of mechanical properties such as resistance to wear.

Responsibility without compromise
We consider ourselves responsible for the careful use of energy, raw materials and waste and make no compromises in our compliance with environmental regulations. Our production wastes from the machining processes are subject to a recycling process and reused as raw material in the consumer goods industry. We are also happy to assist in any enquiries regarding environmentally friendly plastic processing.


matec-30 HV

High performance plastic engineered components are already successfully used as a substitute material for metal components in many industries and applications. Compared to their metal counterparts they usually have a higher wear resistance, are easier to install and maintain and are more economical to manufacture. With the same reliability plastic offers advantages in dimensioning and design for various applications.

Greater safety for elevators: pulleys made from LiNNOTAM
Pulleys made of **LiNNOTAM** have less tendency to overrun than pulleys made of metallic materials. And thanks to their low weight they are easier to install. The rollers are not only very accurate in regard to concentricity and corrosion resistance. The properties of the plastic means that the elevator ropes run over the pulleys with very little friction. As a result the rope lasts much longer. ... design benefits

LICHARZ

BEST PRACTICE:

The competitive edge through engineered components made of plastic

CONVEYOR TECHNOLOGY

Durable in conveyor technology: pulleys made from LiNNOTAM
In conveyor systems steel wire ropes are important and highly stressed machine parts. The efficiency and safety of large systems often depends on their functionality. Unlike other machine components they must be replaced before they are completely worn out. The surface pressure occurring over the contact surface between pulley and the rope is significantly important to the service life and loading capacity of the rope.

Particularly recommended
for conveyor technology:

LiNNOTAM*GLiDE*
LiNNOTAM*DRiVE*
LiNNOTAM*HiPERFORMANCE*

Particularly recommended for cranes and lifting equipment:

LiNNOTAM*HiPERFORMANCE*

CRANES AND LIFTING EQUIPMENT

Reliably stable in cranes and lifting equipment: supporting elements made from LiNNOTAM

Supporting elements such as float pads must withstand the highest loads.In comparison to steel, float pads **made of LiNNOTAM***HiPERFORMANCE* offer a high recoverability after deformation and therefore have a much longer service life. Good material elasticity means that they are stable and secure even if the supporting surface is slightly uneven or irregular. And because of their low weight they are easy to handle during installation and assembly. Supporting elements from **LiNNOTAM** are completely recyclable and resistant to fuels and lubricants.

Particularly recommended
for the food industry:

LiNNOTAM *FG*
LiNNOTAM*GLiDE FG*
LiNNOTAM*HiPERFORMANCE FG*
POM
PET

FOOD PROCESSING

Highly suitable for food: engineered components made from LiNNOTAM
Safety and cleanliness play an extraordinary role anywhere where food is processed. Standards strictly regulate what is permitted to come into contact with the food during the production process. The most stringent regulations are the European guidelines 1935/2004 and EU 10/2011 and the Food and Drug Administration (FDA) in the U.S.
Engineered components from Licharz that come into contact with foodstuffs meet the highest of standards; whether discharge reels, slides, strippers, rolls, gears, rollers, cams or other parts.

Particularly recommended
for the packaging industry:

LiNNOTAM
LiNNOTAM*GLiDE*
LiNNOTAM*DRiVE*

PACKAGING TECHNOLOGY

Smooth and maintenance-free: sliding elements made from LiNNOTAM

Aligning, filling, sealing, labelling, palletisation, wrapping...; packaging machines perform many different functions. The only thing that remains the same is that the product, heavy or light, is moved. Whether this process is efficient or not depends on the friction and wear behaviour of the packaging machine components. Smooth and maintenance free – that is the motto.

You only need a few components? No problem. With our modern CNC machines we can also produce small batch sizes economically. Licharz engineered components made from **LiNNOTAM** always offer a precise, fast and affordable solution.

Particularly recommended for filling technology:

LiNNOTAM
LiNNOTAM*GLiDE*
LiNNOTAM*DRiVE*

31°

FILLING SYSTEMS

Reliable even at high speed: engineered components made from LiNNOTAM
In any automated filling system bottles or cans must pass through many different stations. They travel fast and change direction often. The engineered components used must combine extreme abrasion resistance with exceptionally low friction. Sliding elements from **LiNNOTAM** make a major contribution to the reduction of noise at high production speeds.

LiNNOTAM*GLiDE* is optimized for the high demands placed on the frictional behaviour of engineered components. We manufacture according to individual requirements: screw conveyors, control discs, tracking rolls, sprockets, deflection and guide rolls, cam guides. Thanks to the range of the **LiNNOTAM** family of brands we always find the best material for your specific application.

Before a semi-finished product goes to our customers, the quality has been checked numerous times – from good DSC results through to uniform appearance.

320°

120°

The engineering plastics **LiNNOTAM**, Polyoxymethylene (POM) and Polyethylenterphthalat (PET) are innovative substitution materials for metals as they are wear-resistant, low-friction and easy to process.

LiNNOTAM

Our focus is in the production of **LiNNOTAM**; developed in-house it is an extremely solid and durable cast polyamide. By adding substances such as oil, solid lubricant or heat stabilisers and making modifications in the polymer structure the characteristic properties of **LiNNOTAM** cast polyamide can be adapted and customised as desired. This enables a tailor-made material to be offered for a wide range of applications.

Polyamides (PA 6E, PA 6.6)

Extruded polyamides are heat resistant to deformation, electrically insulating, vibration-damping and have good anti-friction and emergency anti-seizure properties. Their high strength and toughness combined with good machinability make them a particularly well suited material for engineered components for machinery and equipment engineering.

Polyacetal (POM)

Polyacetal combines high strength and stiffness and low moisture absorption with good anti-friction properties. Its good dimensional stability and fatigue strength combined with excellent machinability make polyacetal a versatile construction material even for complex components.

Polyethylentherephtalat (PET)

Polyethylentherephtalat is characterized by good creep resistance, low moisture absorption and excellent dimensional stability. The material is exceptionally suited for use in complex parts with highest demands on dimensional accuracy and surface quality.

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LICHARZ
EXACTLY YOUR SOLUTION:

We're with you from the outset!

We advise you on the use of plastics and work with you to develop your component:

- We check your usage conditions on site at your machine.
- We check your design drawing.
- We recommend the material and the processing method.
- If necessary we produce a prototype for you.

You receive your product quickly and economically exactly as you require.

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engineering plastics

LICH-1907044 Folder Konstruktionsteile EN