Kaykan®

Engineered Polyurethane Solutions.

Kay-Dee Engineering Plastics Ltd.

MOTORSPORT | MUNICIPAL +HIGHWAY | OFFSHORE +MARINE | MINING+ CONSTRUCTION | METAL FORMING | AEROSPACE

Whatever the problem, we can engineer a solution.

Kaylan® is a unique range of formulated plastics whose outstanding physical properties provide the ideal solution to a wide range of engineering problems in a variety of industries.

High performance polyurethane elastomers don't come any tougher than Kaylan. Proven in some of the harshest, most demanding conditions throughout the world, it consistently outperforms more traditional materials such as rubber, metal, plastic and ceramic.

A wealth of experience in precision manufacturing

The secret of Kaylan's success as an effective alternative in a wide range of manufacturing applications lies in the extensive knowledge and expertise of its creators, Kay-Dee Engineering Plastics Ltd. Our wealth of experience allows us to select the optimum grade of polyurethane and combine it with the most appropriate additives. This results in durable components that can be offered in a variety of different hardnesses and varying levels of resilience. At the same time Kaylan is incredibly lightweight and abrasion resistant, demonstrating high strength and an impressive load bearing capacity.

Enhancing your brand identity

We recognise the importance of a strong corporate image which is why we offer the facility to incorporate your name and logo into the design.

Combined with our ability to supply parts in almost any colour and any shape or form, Kaylan parts will complement existing designs and suit almost any new requirement.

In addition to coming in all shapes and colours, Kaylan mouldings are available in sizes up to 10 metres in length, up to 2 metres diameter and from just a couple of grams in weight to in excess of 1000kg. Our flexible production techniques also enable us to alter our production runs, thus accommodating requirements from just a single one-off part to over one million pieces per annum.

Bespoke mouldings

Whilst Kaylan is often manufactured as standard sheeting, rod and block it is primarily supplied as bespoke mouldings. Customers can be assured that the fitting and replacement of spare parts can be achieved with minimal disruption. For instance, there's no need for on-site drilling of holes or alteration of size since all necessary slots and fittings are already moulded into the finished part.

The following pages detail some of the more popular applications of Kaylan in industries as diverse as mining to motorsport. However, the one thing they all have in common is the desire to use a material that not only out performs traditional ones, but also offers long-term cost saving benefits.

In short, Kaylan is lighter than metal, stronger than ceramic and more durable than rubber. And whatever type of component you need, the chances are that we can make it for you.

TUV NORD ISO 9001 | UKAS QUALITY MANAGEMENT 065

Kaylan® performance characteristics:

- Excellent hydrolytic stability
- Excellent resistance to oil, grease and chemicals
- Excellent machining capabilities (the harder grades)
- Very good insulating properties
- Very good resistance to degradation by oxygen and ozone
- Very good resistance to fungus and bacterial growth
- Good range of different hardnesses
- Good ability to bond to other materials such as metals and plastics

Kaylan. The secret behind its success.

Most people encountering **Kaylan®** for the first time are amazed at its incredible range of properties, which make it ideal for such a wide range of engineering applications.

Although it possesses all the benefits of many traditional 'tough' materials, Kaylan can also feature the kind of elasticity and extensibility normally only associated with rubber. The result is a material that can be both tough and flexible at the same time.

Hardness tailored to your needs

Kaylan is available in a wide range of hardnesses, from 10° Shore A to over 80° Shore D. In other words, it can be softer than a car tyre or harder than a golf ball.

What's more, in applications where severe wear and tear is a problem, Kaylan offers outstanding durability compared to conventional plastics or even hardened metals; and, of course, it doesn't corrode either.

Greater load bearing

Kaylan's compression properties also exceed conventional elastomers of equal hardness. In addition to tension and compression, it has a greater load-bearing capacity as well as extremely high load-bearing properties in shear.

Superior impact resistance

Unlike many conventional elastomers, Kaylan loses none of its elasticity and won't crack under impact at higher hardnesses. Not only does it possess significantly better impact resistance than most other plastics, it also resists cracking under repeated flexing.

It's extremely resilient too. Formulations are available offering rebound values of 10-30%, ideal for use as shock absorbers; and 50-75% for high-frequency vibrations or where fast recovery is needed.

Outstanding thermal properties

Kaylan retains its properties at very low temperatures, down to -30°C, and thanks to its outstanding resilience to thermal shock, will continue to perform well in arctic conditions. Likewise, it will also sustain continuous use at +80°C.

Specialist grades

Kaylan is also available in several specialist grades such as high temperature and FDA approved. High temperature formulas can run up to 150°C in a wide range of demanding applications, particularly in the mining, and oil and gas industries. Here they are used for high load and speed situations since they exhibit exceptional properties even at such elevated temperatures. FDA compatible grades of Kaylan, suitable for use in contact with foodstuffs and medical applications, can also be manufactured in a wide range of different hardnesses.

Kayan®

MINING+
CONSTRUCTION

MINING+
CONSTRUCTION

High performance plastics. Tough in the extreme.

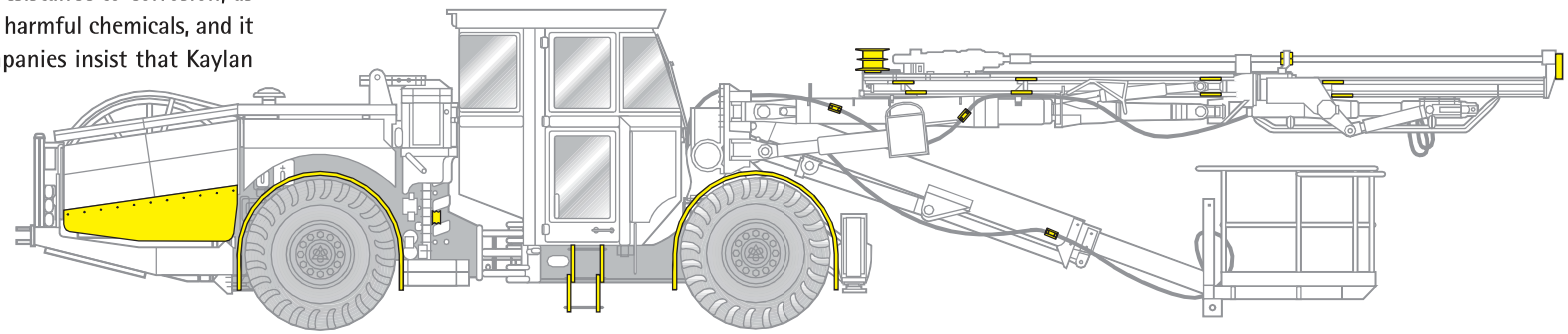
Few industries put vehicles and machinery through a tougher test than mining and construction. Not only does equipment have to stand up to the rigours of the job, it also needs to stand the test of time. This is where Kaylan® and its unique hard-wearing properties set it apart from other traditional materials.

In some of the most demanding conditions imaginable, Kaylan excels day in and day out. Highly resistant to wear and tear, unbreakable and virtually indestructible, Kaylan can be specified with confidence – safe in the knowledge that it will continue to provide maximum performance even in the most arduous of applications.

It's worth remembering that whilst being incredibly strong, Kaylan is also extremely lightweight and offers impressive load-bearing properties in both tension and compression. Add to this its resistance to corrosion, as well as many oils, greases and other potentially harmful chemicals, and it isn't difficult to see why more and more companies insist that Kaylan elastomers are specified for their critical parts.

Kay-Dee can manufacture precisely what you need to provide both performance and long-term economy. Shown below are some of the many areas where Kaylan is already used in the mining and construction industries. However, the list is by no means exhaustive, so if you have a potential application that you don't see listed here, ask us anyway.

- Hydraulic-Hose Reels
- Wear Strips
- Track Pads
- Conveyor Scrapers
- Wheels
- Drill Guides
- Cable Clamps
- Mudflaps
- Protection Sheets
- Tyres
- Buffers
- Wire Cable Pulleys
- Impact Bars
- Flexible Ladder Supports
- Suspension Buffers



Rocket Boomer case study with kind permission from Atlas Copco, Sweden.

The Construction Equipment Association

Tried, tested and quality assured.

Kaylan® high performance materials are manufactured in a wide variety of shapes, sizes and colours. However, one constant remains present during all phases of production – quality. Whether a simple, one-off prototype is required, or a batch-run of one thousand pieces, the quality will always be the same.

This is because Kay-Dee **only** processes its materials via the very latest computer controlled casting machines.

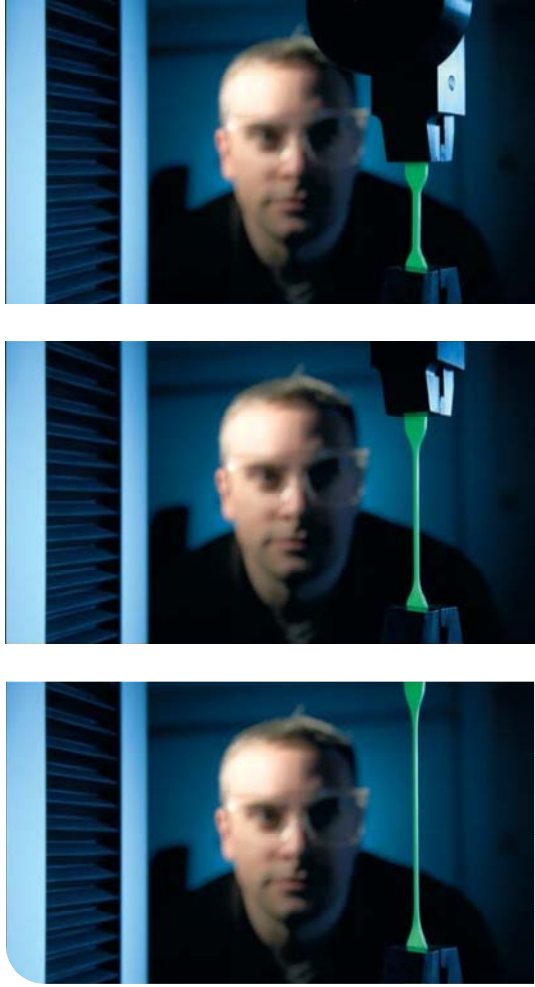
Our quality assurance system ensures extensive in-house testing of both materials and procedures at every stage of manufacture. This strict system governs all output, enabling us to obtain the very best results.

Every product fit for purpose

Precision moulded products demand exacting manufacturing standards. In our state of the art testing facility sample parts undergo rigorous examination to maintain these high standards. Test data confirms that Kaylan products excel not only in extremes of heat, cold, wet and dry, but also under extreme pressure, stress, flex and compression. This strict approach to standards ensures every Kaylan product is 'fit for purpose'.

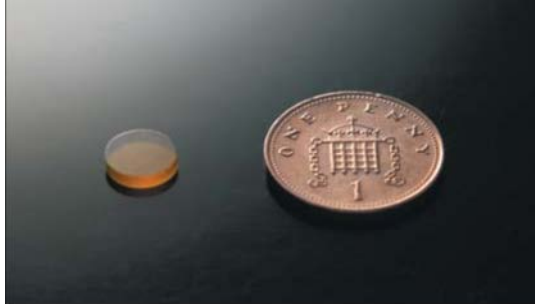
Environmentally friendly

Although our products are designed to work in the harshest of environments, we're still committed to doing our bit to minimise global warming. Our purpose-built factory has been designed with efficiency in mind and features computer-controlled heating and lighting systems that save energy and reduce our carbon footprint. Computers also control our ovens and casting machines to reduce power consumption, and a solvent recycling plant dramatically reduces our use of solvents. In fact, everything that can be recycled, is recycled.



Kaylan®

Kaylan is a registered trademark of Kay-Dee Engineering Plastics Ltd.



Meeting all your requirements.

Whilst specialising in bespoke mouldings, **Kay-Dee Engineering** also manufactures sheeting, pads, blocks and rods in a wide variety of sizes, hardnesses and colours to suit most requirements.

Kaylan® Sheeting

Sheeting can be produced in a variety of dimensions and by many different methods including centrifuged, flat cast, moulded and extruded. Applications are widespread through a variety of industries and include cutting or punching gaskets, scrapers and flaps, protecting industrial table tops and lining wear chutes and blast cabinets.

Kaylan® Blocks

Blocks are produced in an extensive range of sizes and weights. Starting from just 10mm square (weighing around 50g) and exceeding 2500mm x 1200mm (around 1500kg). They currently find uses in metal forming as machining blanks, vibration isolation, impact buffers, dry dock supports and many other applications. If you require a block of any specific size, call us and we will be happy to discuss your requirements in more detail.

Kaylan® Rods

Rods start at 8mm diameter by 150mm long and can exceed 500mm in diameter by 2000mm long. Some areas in which rods are used are machine billets, rollers, pressing intensifiers and damping bars. With different formulations to suit different applications we are sure to meet your exacting needs.

Additional Services

Many existing Kay-Dee customers have benefited from the sourcing of products and services within other sectors of the rubber and plastics industry.

These include:

- Injection Mouldings
- Compression Mouldings
- Extrusions
- Machining
- Fabrication
- Moulded and Slab Stock Polyurethane Foam
- Materials such as – Nylon, Acrylic, Polycarbonate, Rubber,
- Polyethylene, Polypropylene and many more
- Computer-aided machining and bulk repetition work in all
- the above materials

From incredibly small to really quite tall.

Kaylan® is manufactured exclusively by Kay-Dee Engineering Plastics Ltd., providing the ideal solution to a wide range of engineering problems in a variety of industries.

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