

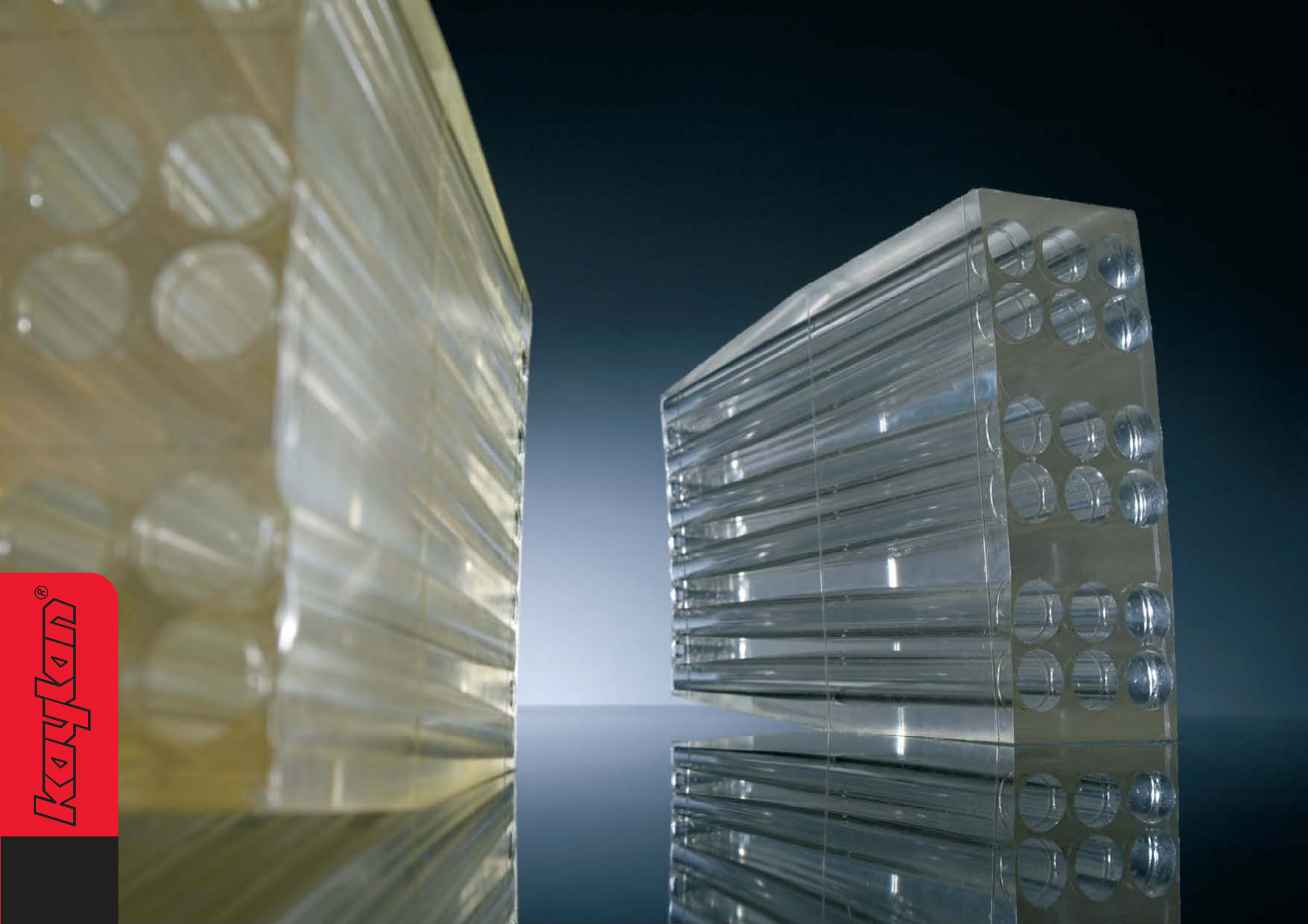
KayKee®

Engineered Polyurethane Solutions.



Kay-Dee Engineering Plastics Ltd.

Kaykan®





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 outperforms 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.



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.



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An integral part of modern engineering solutions.

In today's modern aerospace industry there is no margin for error. Only the finest, most reliable products are used in the production of parts assembled into the latest aircraft. Naturally Kaylan®, with its impressive list of qualities, makes for an obvious choice for sheet metal forming and many other applications within the industry.

Kaylan is used to protect aerospace components from accidental damage during the assembly of the wings and other structures, particularly in the new carbon fibre construction of many modern aircraft. These items include spar and manhole protection, anti-fatigue/memory foam mats, rib and stringer protection, and ribbay mats. All are produced not only to protect the assemblies but also to enable fitters to work in a more comfortable environment.

Sheet metal forming is a highly technical and demanding process. Those organisations using specially-formulated Kaylan within their manufacturing facility achieve superior tolerance control during the production of vital aircraft components. However, by not just getting it right, but getting it right first time, Kaylan has been able to eliminate 90% of the manual re-work that has historically been required, thus demonstrating substantial time and cost benefits.

A specially-developed range of Kaylan materials is being used to enhance performance across a wide range of metal pressing techniques from traditional press braking, rubber pad pressing and stretch forming right through to the latest fluid forming processes. What's more, Kaylan not only withstands repeated flexing under enormous pressure, it also intensifies the pressing action to ensure a superior finished product.

Resistant to cuts, abrasion and punctures, Kaylan slave sheets also improve the life of the presses by protecting the rubber pad or polyurethane diaphragm from damage by debris and sharp edges. Additionally, by offering improved forming characteristics at lower pressing forces, Kaylan reduces both stress and wear on the machine allowing for longer service intervals and improved productivity.

Kaylan can also eliminate the secondary polishing often required after metal has been marked during the press braking process. By using Kaylan film whilst press braking, performance is enhanced and metal parts are repeatedly produced free of any marking from the press tool.

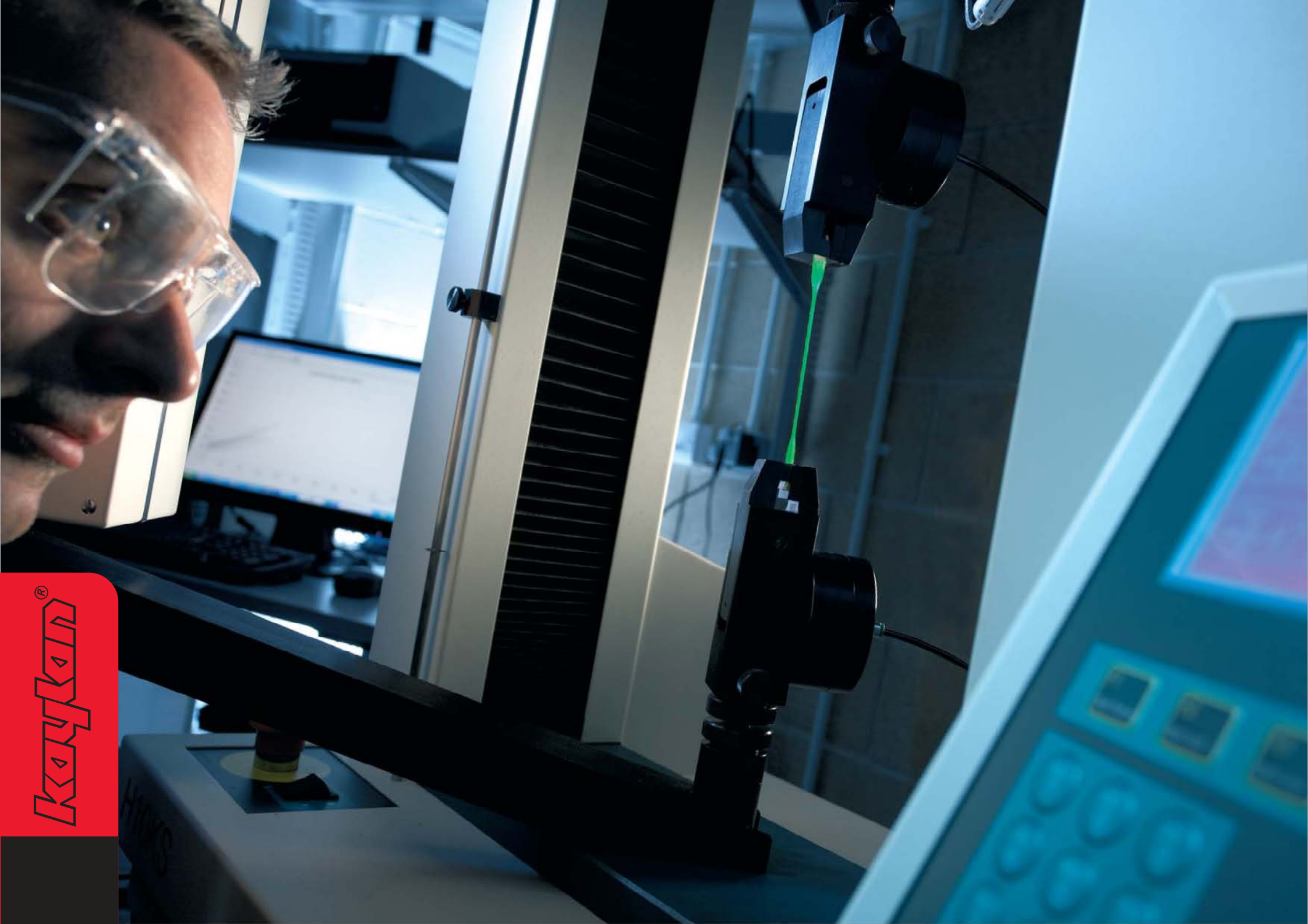
A summary of the applications for Kaylan forming materials is detailed below:

- Replacement of traditional rubber press pads with superior Kaylan
- Overlay Slave Rubbers • Intensifiers • Press Brake Rubbers
- Non Marking Film • Stretch Forming Pads • Trayfill Pads



Aerospace component used to protect Airbus wing manholes.





Kaykan®



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.

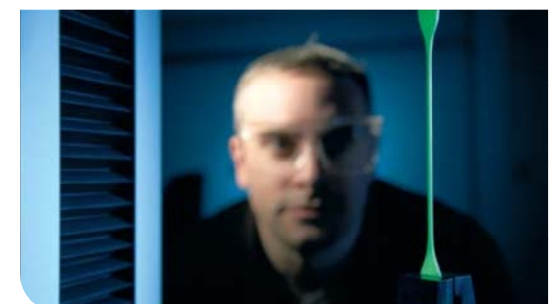
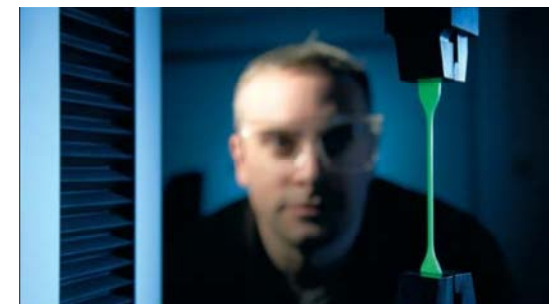
Our quality assurance system ensures extensive in-house testing of both materials and procedures at every stage of manufacture. This strict system governs all output, enabling us to obtain the very best results.

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.





Kaykan®



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

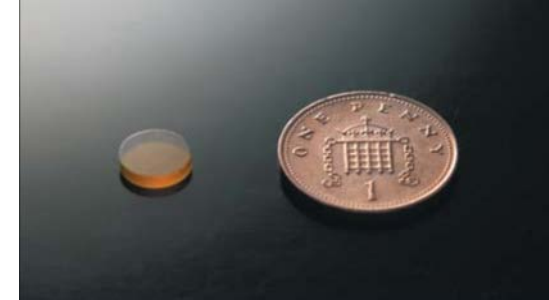
Rods start at 8mm diameter by 150mm long and can exceed 500mm in diameter by 2000mm long. Some areas in which rods are used are machine billets, rollers, pressing intensifiers and damping bars. With different formulations to suit different applications we are sure to meet your exacting needs.

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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