

Rubber Mouldings
Plastic Mouldings
Seals
O Rings
Rubber to Metal Bonding



East Anglian Sealing Co Ltd

www.easeals.co.uk



East Anglian Sealing - Providing Sealing Solutions throughout the UK, Europe, Africa and the Middle East

Established in 2002, but with highly experienced staff, East Anglian Sealing manufactures and supplies many different types of sealing product to all sorts of industry in countries across the World.

With a comprehensive customer base, we supply a wide range of moulded product. From simple grommets and tap washers, to O Rings and oil seals through to technical mouldings used in high integrity applications such as in the Aerospace industry.

With our quality back-ground, we have continually worked with both new and existing customers to expand the selection of products we offer and now supply all types of both rubber and plastic mouldings for any application.

Along with our commitment to quality and customer satisfaction, we also ensure our production invests heavily in modern technology so that our equipment and facilities are capable of producing parts to today's quality and cost criteria.

Please contact our sales office with your enquiries, for a fast, professional service

+44 (0) 1787 880433
sales@easeals.co.uk



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Rubber Moulding

Introduction

Moulding elastomeric materials generally involves taking a mixture of ingredients, converting them into a compliant state, and forming them—normally under heat, into a final shape inside a mould tool.

Processes

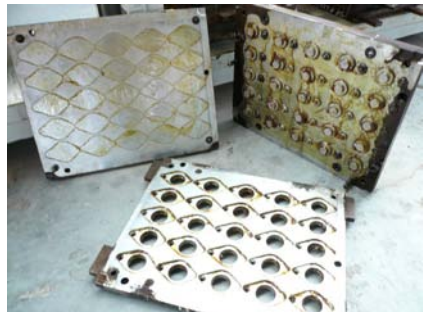
Compression Moulding – uncured rubber, typically in slab form, is placed direct into the mould cavity. The mould is then closed and compressed in a moulding press between 2 heated platens. The heat is transferred through the mould tool activating the compound and beginning the process of vulcanisation. Each compound used requires a fixed time under heat and constant pressure, depending on the component weight after which time the platens are split, the tool opened, and the moulded product removed from the tool. This process can be relatively slow as it involves the opening and closing of the mould tool, and application of pressure through the platens which are normally fixed on an hydraulic press.

Transfer moulding – with this process, the uncured material is fed into a chamber in the tool, where it is heated again between two platens, as the compound becomes more malleable, a plunger pushes the compound through a port, into the mould cavity – pressure and heat are maintained until the part is cured.

Injection Moulding – similar to transfer moulding, however the chamber used to activate the compound is often part of the press rather than the mould tool. This generally makes the process faster, and injection machines normally operate with automatic gate systems, shut-offs, opening and product ejection. Depending on the type of material being used, and initial viscosity of the compound, cycle times can be very short – especially in liquid fed injection machines using materials such as silicones. Injection tools are normally continually run and use higher temperatures with shorter curing times making them more cost effective for long runs.

Tooling

Compression tools are normally cheaper to manufacture, but may not suit more technical parts where higher tolerances are required. The closed style of injection tools, while being more expensive to produce, can offer better tolerances and are often preferred when producing intricate designs.





Standard Seals



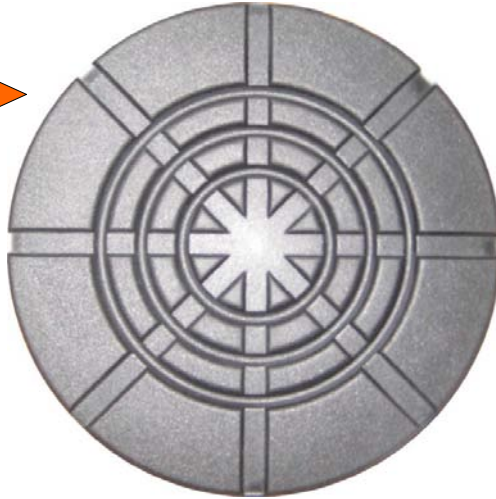
Many different types of standard moulded seals are supplied in every possible material in various hardness including:-

- O Rings - ISO3601, DIN3771, BS4518, BS1806, JISB2401 etc
- Shaft Seals - metal or fabric reinforced, spring inserts etc
- Quad Rings - anti-roll seals
- V Rings - axial shaft seals
- U Rings - rod, gland and piston seals
- Wiper Seals - metal clad, snap-fit etc
- Wear Rings - full or split styles
- Back-up rings - available in all materials

Along with these standard seals, special sizes can also be produced from stock materials such as round and square cord materials. Typically these are spliced and joined using either cold bonding or heat vulcanisation. For large seals, stage moulded sections can be produced, each section being moulded in turn to form larger seals in any shape. This method of manufacture can be significantly more economical than producing a full sized mould tool, especially where small quantities are required.



While standard seals make up a large percentage of the moulded seals supplied, bespoke moulding business is now equally as important across all types of industry. Here are some examples of products supplied for various uses:



- Aerospace - includes parts for ground support, engines, instrumentation
- Automotive - engine mounts, seals, gaiters, seat parts, electrical connectors
- Chemical - seals used in processing and storage
- Clothing and Toys - moulded logos, head-gear, balls, toy vehicle wheels
- Construction - seals for construction equipment, plumbing
- Defense - moulded vehicle mats, seals for radar equipment, ejector seats
- Domestic Appliance - moulded hoses, high temperature seals, grommets
- Electrical and Electronic - EMI/RFI moulded seals, connectors
- Engineering - special oil seals, bellows, anti-vibration feet, metal-rubber
- Farming - rubber bearings, flexible connectors, spiral rollers, star-wheels
- Food and Drink - FDA seals, bottle clamps, filler seals
- Marine - prop shaft seals, engine seals, deck seals, port-hole seals
- Metal production and processing - rollers, wheels, clamps
- Oil & Gas Industry - pipe seals, piggy back blocks, saddles
- Paper and Cardboard - suction cups, hi-speed rollers
- Pharmaceuticals - silicone seals, powder fillers, tablet moulds
- Textiles and furniture - feet, ferrules, buffers
- Transport and Logistics - railway seals, rail-pads, shock absorbers
- Utilities - moulded gaskets, electrical connectors, lamp seals



Rubber to Metal

Metal reinforcements and attachments can be included in all types of moulding process. Normally to provide rigidity, metal inserts are positioned within the tool cavity according to the part design, while stainless steel is a standard reinforcement, specially primed and sealed metals can also be used.



Bespoke Mouldings

Using customers own designs, a wide variety of rubber and urethane mouldings can be manufactured. From low-cost compression single unit tooling, through to high volume injection tools all types of polymers can be processed. A design service is also available along with advise on material suitability.



Hoses

Along with extruded and mandrel-built hoses, moulded shaped hoses are supplied, with or without fabric reinforcement in all configurations. Convolute hoses can also be moulded and end fittings can be moulded onto hoses during production along with valves for inflatable hoses.





Special Items



Bellow and Gaiters

Used in some of the most harsh environments, moulded bellows, gaiters and connectors can be produced from 1gram to 50kg, excluding any metal components that are integral to the part as in stainless steel flange connectors. Fabric reinforcement can be included during moulding to produce high strength parts.



Dipped Moulded Product

Produced on formers, dipped moulded products include products such as tubes, bags, specialist gloves and inflatable seals. While this process is not strictly moulding, it still involves converting compound to a liquid form and curing it into a finished elastomer product.



Diaphragms

Shaped diaphragms are normally moulded either using uncured calendared material with fabric interweave, or by hand layering separate compound and fabric - usually in compression moulds. Special anti-wicking textiles are used in the manufacture of diaphragms to ensure there is no leakage under operating conditions.

Rubber Materials

Available Materials

- NBR—Acrylonitrile Butadiene, Nitrile, Buna N
- HNBR - Hydrogenated Nitrile
- XNBR — Carboxylated Nitrile
- NBR/PVC — Nitrile PVC blended
- EPDM— Ethylene Propylene Diene Rubber
- EPM—Ethylene Propylene Monomer
- NR—Natural Rubber
- CR—Polychloroprene, Neoprene
- FKM—Fluorocarbon rubber
- VMQ—Silicone rubber
- FVMQ—Fluorosilicone rubber
- PU—Polyurethane
- PTFE—Polytetrafluoroethylene
- FEP/PFA—Tetrafluoroethylene/hexafluorpropylene copolymer
- FEPM—copolymer of tetrafluoroethylene and propylene with an approx 54% fluorine content
- FOAMS - we are able to mould in a variety of foams including Neoprene, Nitrile, Fluoroelastomers, Silicone and Polyurethane
- Many other materials and blends are also available both to universal standards (ie BS, DIN etc) and customers own specifications.

Using both in-house and external compounding facilities, our production plant is able to supply almost any grade of polymer. Test certificates can be issued from either our internal testing laboratory or from external test houses for all types of applications including automotive, pharmaceutical and aerospace specifications.



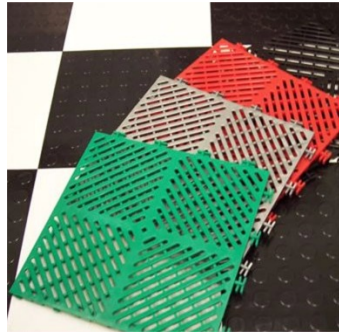
Plastic Moulding

Introduction

To compliment our rubber production, we also provide moulded products in a range of plastic materials—using various processes.

Processing

Injection Moulding - while this is often seen as an expensive method of production due to often excessive tooling charges, we have ensured that our tooling costs are kept to a minimum and are amongst the least expensive in Europe. Tooling is produced in-house at our plastics moulding factory to high precision and quality in single or multi-cavity using a variety of machine tools including state-of the art multi axis spark erosion. We are able to help with design where required and are happy to advise on choice of materials. Machinery capabilities from 0.5gram to 5.5kg per cavity.

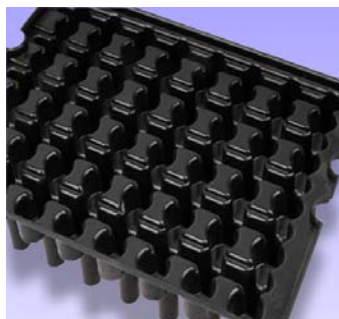


Blow Moulding—using heated pre-formed material, we can produce parts from extruding into blow moulding tools, using air to inflate and form the product. This is typically used for bottles and shaped hoses (including convoluted profiles used in the White Goods market). Materials include HDPE, PVC, PP and PETG Polyester.



Vacuum Moulding—we are able to supply various thickness parts (0.25mm to 6mm) by this process, using vacuum beds up to 2m. The standard materials used with this process include ABS, PETG Polyester and High Impact Polystyrene.

While we are able to supply high volume product in any form of plastic moulding, our niche has become the market for short runs and special parts, which many larger companies find difficult to serve.



Plastic Materials

Available Materials

- ABS - Acrylonitrile Butadiene Styrene
- HDPE - High Density Polyethylene—typically used for plastic bottles
- PA - Nylon - different grades available, drive wheels, cogs
- PC - Polycarbonates - lamp lenses, glazing, high-impact products
- PP - Polypropylene - microwaveable containers
- LDPE - Low Density Polyethylene - vehicle components, bags
- PET - Polyethylene Terephthalate thermoplastic - clear food grades
- PTFE - Polytetrafluoroethylene - chemical resistant parts
- PVC - Polyvinyl Chloride - pipe fittings, window / door frames
- GPPS - Polystyrene - furniture, electrical cabinets, packaging
- TP - Thermoplastic materials including TPE, TPV etc



Using both in-house and external compounding facilities, our production plant is able to supply almost any grade of polymer. Test certificates can be issued from either our internal testing laboratory or from external test houses for all types of applications including automotive, pharmaceutical and aerospace specifications.

Additional Processes

Along with standard injection, blow and vacuum moulding facilities, we are also able to offer the following processes from a partner company (fully ISO approved)

Rotational Moulding - hollow moulded products such as tanks and bins etc offering consistent wall thickness and often producing high-strength products.

Plastic Dip Moulding - used mostly for flexible PVC products with thinner walls where parts are moulded onto forms on a continuous dipping process - items include tool handles, gloves and caps.

Slush Moulding - similar to dip moulding, this process builds material wall thickness on the inside of a tool, rather than on the outside producing external pattern on the product which cannot be obtained using dip moulding - items include grip surface handles, textured gloves etc



East Anglian Sealing Co Ltd

Units 4—6 Goldingham Hall

Bulmer

Sudbury

Suffolk

CO10 7ER

Tel: +44 (0) 1787 880433

Fax: +44 (0) 1787 880442

Email: sales@easeals.co.uk

www.easeals.co.uk