



Polymers
A1 Polymers
Company Profile



A1 Polymer



Chemistry between US

We are experts in the creation of high quality elastomers and Engineering plastics offering solutions for the most demanding markets. We mix, mould, extrude, hand fabricate and formulate Elastomers and High Performance Plastics for all the Engineering Solutions

Polymers

Generating break through technology since 5 Years



About A1 Polymers



What we do, we do well. . .

Everything we do at A1 Polymer is governed by a strong set of core values.

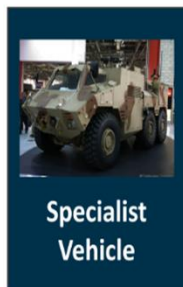
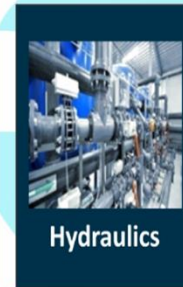
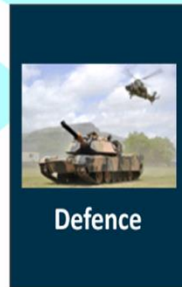
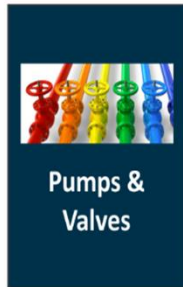
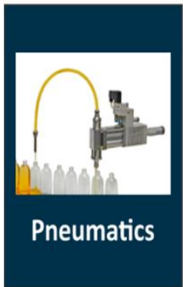
We are experts in the manufacturing of Rubber O rings and Gaskets, Rubber Grommets, Rubber Diaphragms, Rubber To Metal Bonded Parts, Rubber Anti Vibration Mountings, Silicone Extruded Solid Profiles, Silicone Tubings, Silicone Extruded Sponge Profiles and Silicone Hand Built Turbo Hoses.

Where are we located

- We are located at AV Udyog Industrial Estate which is near to vasai railway station.
- The factory site has the locational and economical advantages being strategically located in the state with proximity to sea port, rail connectivity and airport.

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Your Market is our market



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POLYMER IS OUR BUSINESS



| | | | | | | |
|---|---|--|--|--|---|--|
| V_{MQ} Silicone | F_{VMQ} Flurosilicone | E_{CO} Epichlorohydrine | H_T-VMQ High Temperature Silicone | P_H-VMQ Pharmaceutical Grade Silicone | F_{DA}-VMQ Food Grade Silicone | A_{EM} Ethylene Acrylate <small>Vamac[®]</small> |
| F_{KM} Fluorocarbon <small>Viton[®]</small> | E_{U-AU} Polyurethane | H_T-ACM High Temperature Polyacrylate | N_R Natural | F_R-VMQ Fire Retardant Silicone | E_{PD}M Ethylene Propylene Diene | N_{BR} Nitrile |

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Material Selection for Rubber

"We do not want to sell you our elastomer, we want to sell you the right elastomer."

| | Natural Rubber | Styrene Butadiene Rubber | Ethylene Propylene Diene Rubber | Epichlorohydrine Rubber | Nitrile Rubber | Hydrogenated Nitrile Rubber | Polyurethane Rubber | Polyacrylate and Ethylene-Acrylate Rubber | Fluorocarbon Rubber | Silicone Rubber | Fluorosilicone |
|--|----------------|--------------------------|---------------------------------|-------------------------|----------------|-----------------------------|---------------------|---|---------------------|-----------------|----------------|
| Abbreviation | NR | SBR | EPDM | CO/ECO | NBR | HNBR | EU AU | ACM/AEM | FKM | VMQ | FVMQ |
| Hardness Range Shore A | 30-90 | 35-95 | 20-95 | 40-90 | 30-95 | 45-98 | 55-90 | 50-90 | 40-90 | 30-85 | 30-80 |
| Thermal Properties | | | | | | | | | | | |
| Low-temperature flexibility down to °C | -55 | -30 | -50 | -35 | -30 | -45 | -30 | -30 | -20 | -65 | -45 |
| Max. service temperature °C | 80 | 100 | 130 | 130 | 110 | 150 | 120 | 150 | 200 | 200 | 200 |
| Resistance Properties | | | | | | | | | | | |
| Fuel | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Mineral Oil (at 100°C) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Acids (25% sulphuric acid at 50°C) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Water (at 100°C) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Weathering and Ozone | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Air Impermeability | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

Assessment: ● Very good ● Satisfactory ● Insufficient

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Properties of Rubber

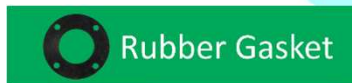
| Type of Rubber: | Electrical Resistance | Oil Resistanc | Flame Resistance | Impact Resistance | Abrasion Resistance | Tear Resistance | Oxidation Resistance | Ozone Resistance |
|-----------------|-----------------------|---------------|------------------|-------------------|---------------------|-----------------|----------------------|------------------|
| Natural Rubber | Poor | Excellent | Poor | Excellent | Excellent | Excellent | Fair | Poor |
| SBR | Poor | Good | Poor | Good | Very Good | Fair | Good | Fair |
| Buna-N | Excellent | Poor | Poor | Good | Good | Fair | Good | Fair |
| Butyl | Poor | Excellent | Excellent | Fair | Good | Good | Excellent | Good |
| Neoprene | Good | Very Good | Good | Good | Excellent | Good | Excellent | Excellent |
| ECH | Excellent | Good | Poor | Fair | Good | Fair | Good | Very Good |
| Hypalon | Good | Excellent | Good | Fair | Excellent | Fair | Excellent | Excellent |
| EPDM | Poor | Excellent | Poor | Good | Good | Good | Excellent | Excellent |
| Silicone | Fair | Good | Fair | Fair | Poor | Poor | Excellent | Excellent |
| Viton | Excellent | Good | Good | Very Good | Good | Fair | Excellent | Excellent |
| Santoprene | Good | | Good | Good | Fair | Good | Excellent | Excellent |

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Products

SOFT MATERIAL IN A TOUGH ENVIRONMENT

Rubber Moulded Products



Extrusions



Rubber Hand Fabricated



O RINGS & Gaskets

O-ring is a solid-rubber seal shaped like a doughnut or torus.

When compressed between mating surfaces, an O-ring blocks the passage of liquids or gases.

A rubber gasket is placed in between two objects in order to prevent leakage of any kind of the pressurized or not pressurized media. the gasket requires resistance against media and temperature within the range of the given application.

- Nitrile O-Rings and Gaskets
- Neoprene O -Rings and Gaskets
- EPDM O-Rings and Gaskets
- FKM O-Rings and Gaskets
- Metal detectable rubber O-Rings



Rubber Grommet

A1 Polymer Technologies manufactures a wide assortment of high-quality rubber grommets to fit most industrial applications. Rubber grommets are often used in automotive and industrial applications to protect, cable, wire, hose, pipe or other objects which pass through a panel hole. By surrounding the object with a rubber “cushion”, the grommet prevents the abrasion and vibration which results from the object contacting the edges of the hole through which it passes.

Our rubber grommets are used in a wide range of applications, including electronics, aerospace, healthcare, construction, transportation, and defense applications.



Specification Grades

We manufacture our rubber grommets using commercial grades of SBR, nitrile, silicone, Neoprene[®] 1, and EPDM. Materials are available in commercial and specification grades including:

- NASM 3036 Composition A and B
- Mil Spec
- ASTM
- AMS
- SAE
- And Others

Rubber Bellows & Boots



Rubber bellows and boots can be produced in a range of materials and if required a variety of colours (depending on the elastomer). These products can be used to protect, shield and isolate sliding and rotating mechanisms.

Rubber bellows and boots are an essential part of many different industrial systems. They are flexible seals used in a range of applications for sealing dust and other environmental elements in applications with a calculated range of motion

Our custom rubber bellows and boots are designed to protect against:

- dust
- water
- oil
- grease
- acids
- bleaches
- spatter and pressure
- moisture
- chemicals
- UV
- other environmental elements

RUBBER MOULDED PRODUCTS

Rubber to Metal Bonded Parts

Rubber to metal bonding is a method where rubber is mechanically bonded to metal during the rubber moulding process to achieve a successful bond, much of the value lies in mould tooling design, surface preparation processes, primer selection and curing configuration (temperature, pressure and duration).

Materials used include;

- Mild steel
- Carbon steel
- Aluminum
- Brass



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RUBBER MOULDED PRODUCTS

Rubber Anti Vibration Mounts

Rubber Anti Vibration Mounts provide support and help to protect the equipment from destructive vibration forces. Our range includes primary suspension, sandwich mounts, chevrons, secondary air spring emergency mounts, engine, motor, gearbox and raft vibration control mounts.



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Rubber Diaphragms

We are manufacturer and supplier of high quality rubber diaphragms, also referred to as diaphragm seals. Our company's reputation for excellence has been built on our ability to provide our valued customers with the most effective designing, engineering and manufacturing solutions to meet their most demanding applications.

Rubber diaphragms and fabric reinforced rubber diaphragms are critical to the operation of equipment and systems in the industrial, automotive, aerospace, oil, gas, medical instrumentation, and pump and valve industries



The construction of fabric reinforced rubber diaphragms is achievable using special reinforcement materials including:

1. Polyester (Dacron)
2. Polyamide (Nylon, High Strength)
3. Cotton
4. High-Temp Polyamide (Nomex®)
5. Liquid Crystal
6. Polymer based fabrics (Vectran®)



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Silicone Extrusions

What is Silicone Extrusion?

Silicone extrusion is the process whereby silicone is forced through a shaped die (a stainless steel disc with a pattern cut out) to produce cords, complex profiles and cross-sections.

Silicone extrusions typically show a huge improvement over other materials – they last longer, come in a multitude of colours, and stand up to a wider variety of environmental conditions. We can produce simple extrusions, or make custom sizes with complex cross-sections



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Silicone Extrusions

Material Benefits Resulting from the Polymer/Filler Structure

Silicone rubber usually contains pyrogenic silica as filler, Pyrogenic silica is structurally very similar to the polymer.

They both consist predominantly of Si and O which leads to very interesting properties:

- ❖ High transparency
- ❖ Good mechanical properties thanks to effective polymer-filler interaction
- ❖ Good flame resistance; non-toxic combustion products in the case of fire



Silicone Extrusions

General Properties of Silicone Rubber

- ❖ Broad operating-temperature range from $-50\text{ }^{\circ}\text{C}$ to $+250\text{ }^{\circ}\text{C}$, (specialty grades: $-110\text{ }^{\circ}\text{C}$ to $+300\text{ }^{\circ}\text{C}$)
- ❖ Only slight changes in physical properties between -50 and $+180\text{ }^{\circ}\text{C}$
- ❖ Excellent compression set
- ❖ Odorless and tasteless (many grades are BfR and FDA compliant)
- ❖ Can be pigmented as desired
- ❖ Can be easily processed
- ❖ Can be adjusted electrically from insulating to semiconducting High radiation resistance

Typical Range of Mechanical Properties

- ❖ Density $1.05 - 1.60\text{ g/cm}^3$
- ❖ Shore A hardness $3 - 90$
- ❖ Tensile strength $5 - 11\text{ N/mm}^2$
- ❖ Elongation at break $100 - 1,100\%$
- ❖ Tear strength (ASTM D 624) $5 - 55\text{ N/mm}$
- ❖ Compression set (22 h / $175\text{ }^{\circ}\text{C}$) $5 - 25\%$
- ❖ Rebound resilience $30 - 70\%$



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Silicone Extrusions

Typical Applications Silicone Extrusions

Silicone extrusions are used in many applications and industries throughout the world. Have vast experience in designing and manufacturing for virtually any requirement including:

- ❖ Industrial And Commercial Food Oven And Cart Seals , Gaskets And Fluid Handling
- ❖ Washers And Seals For Electronics And Electrical Equipment
- ❖ Architectural And Window Seals
- ❖ Electrical Connector Seals
- ❖ Fiber optic Sheathes
- ❖ Industrial Louvers And HVAC Equipment
- ❖ Automotive Electrical Enclosure Weather Seal
- ❖ Outdoor Electrical Enclosures
- ❖ Outdoor Cellular Telecommunications Enclosures
- ❖ Water Purification and Filtration Seals And Tubing



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Silicone Extrusions

Typical Applications Silicone Extrusions

- ❖ Silos And Storage Tank Seals And Tubing
- ❖ Medical Equipment Seals And Tubing
- ❖ Aerospace and Military Seals And Gaskets
- ❖ Dairy Seals And Fluid Handling Tubing
- ❖ Peristaltic Tubing
- ❖ Plastic Case Seals



Polym

Silicone Extrusions

A1 Polymer can produce extrusions for a wide variety of applications and will be pleased to quote for requirements to sketch/drawing details or existing sample to match. New tooling and samples typically takes 2-3 weeks. The examples below are by no means an exhaustive list, merely a sample of some of the profiles A1 Polymer can produce. If you cannot find what you require please give us a ring and we will do our best to meet your requirements.



Tubing

0.3mm - 75mm inner diameter
0.2mm - 25mm wall thickness



Cord

0.2mm - 50mm diameter



Keyhole Section

3mm - 40mm height
6mm - 20mm base



Autoclave Seal

3mm - 40mm height
6mm - 20mm base



Triangular Section

6.4mm - 50mm height
6.4mm - 50mm base



Channel Tube

4mm - 20mm tube section
Various channel dimensions from 1mm - 6mm gap

Silicone Extrusions



Flap Seal

From 1mm - 6mm
channel gap
Various flap dimensions



Omega Tube Section

4mm - 20mm tube
section
Various 'T' section base
dimensions



'P' Tape

3.5mm OD - 33mm OD (bulb)



'U' Channel

0.5mm - 30mm
(slot)
Various heights &
widths



'e' Section

10mm - 50mm
base
6mm - 25mm
height
Various channel
gaps



'D' Section

6mm - 50mm base
6mm - 25mm height
Solid 'D' sections also
available



'L' Section

1mm x 1mm to 10mm x
10mm section
Various height & base
dimensions



'H' Section

Various channel
gaps
From 12mm overall
height
Various widths



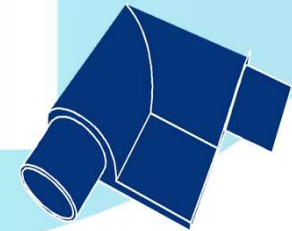
Double 'P'

3.5mm dia bulbs to 12mm dia
bulbs
Various widths to 50mm wide



Custom Design

Custom channel seals
are one of thousands
available



Vulcanised / Moulded Corners

Corners with the best strength and
appearance combination

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Silicone Extrusions

| | |
|-----------------------------------|---|
| GENERAL PROFILES | Round cords, tubings, squares, rectangles |
| CUSTOM MADE PROFILES | Production of special profiles to customers drawings or samples. We offer a development service which includes die design and manufacture |
| TRANSLUCENT MEDICAL GRADE TUBINGS | This high quality non-toxic medical and food grade silicone rubber (B.G.A. F.D.A. approved) tubing is available in a range of sizes to suit most requirements |
| SILICONE SPONGE EXTRUSIONS | Production of seals and gaskets using non-toxic blowing agents |
| CABLE COVERINGS | Production of silicone covered cables in single or twin configuration from customer supplied wire |
| OVEN DOOR GASKETS | Production of complete gaskets including bonding to metals |
| CORNER MOULDINGS | Production of complete seals and gaskets |

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Silicone Extrusions

We A1 Polymer Technologies is not use any automated process for manufacturing our silicone turbo hoses. Each hose is hand crafted and some designs are very time consuming.

Due to the special nature of our material, specialized tooling is required to form the materials. This in turn gives you a product that holds less pressure when under high temperatures.

Turbocharger & CAC (charge air cooled) hoses are manufactured in silicone with an Aramid reinforcing fabric as standard, allowing higher temperature & pressure resistance.

For more demanding requirements, construction can incorporate wire reinforcing, offering greater resistance to profile changes & improved flexibility respectively



BULWARK SILICONE MASK

Our best selling product



A1 POLYMERS
SILICONE MASK



A1 POLYMERS
SILICONE MASK



A mask that costs INR 10/month with a durability of 2years

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List Of Machines

Available Moulding Press sizes:

- 26 Inch x 26 Inch -01 nos.
- 24 Inch x 24 inch -01 nos
- 18 inch x 18 inch -01 nos.
- 14 inch x 14 inch -01 nos.
- 12 inch X12 inch -02 nos.
- 10 inch X 10 inch -02 nos.

Available Silicon Extruding Machineries:

- 2 Inch Silicon Extruder
- Conveyor Belt
- Online Curing Vulcaniser Oven
- 1 meter x 1 meter oven

TEAM



Mr. Naresh Soni, Chairman and MD of A1 Polymers is a well qualified professional and a visionary at work. A BSc. Chemistry of 1982 batch has gained enormous experience in Industries ranging from Pharmaceutical, Chemicals, Civil and Rubber. Along his journey till now he has chaired many positions and proved with this determination that he is the best example of Entrepreneurship. With his rich experience of 25+years he is still ongoing and leading the entrepreneurial journey by founding A1 polymers in 2015 and since then helping clients to fulfil their project demands by manufacturing best in class product. He also works as a consulting professional to many budding startups, guiding and nurturing the young minds. A1 polymers is fully capable to carry out any designing, manufacturing, experimenting and consulting to all industries need under the expertise of Mr.Soni & team.

Our Team

Our Team includes well qualified and skilled labors with best & required expertise in handling tools and jobs well. We also have Engineers and Marketing personnel to look after our expansion process. At A1 polymers we believe in building team not only for present but for also for Future.

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CERTIFICATES



Certificate of Registration

This is to certify that:

A 1 POLYMER

DR. B A ROAD, A305, 3B CO-OP HSG SOCIETY LTD., 60 FT ROAD, SHASTRI NAGAR, MIRA BHAYANDAR, THANE - 401101, MAHARASHTRA, INDIA.

has been independently assessed by QRO and is compliant with the requirement of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

MANUFACTURING AND SUPPLYING OF RUBBER MOLDED, METAL TO RUBBER BONDED, HOSES, EXTRUDED RUBBER COMPONENTS, SILICONE GASKETS, O RING AND SILICONE PRODUCTS.

Date of Certification: 22nd June 2023

2nd Surveillance Audit Due: 21st June 2024

1st Surveillance Audit Due: 21st June 2023

Certificate Expiry: 21st June 2025

Certificate Number: 305022002215Q



Chandrabhushan
Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 90 days from date of the audit. In case surveillance audits are not allowed to be conducted, this certificate should be suspended / withdrawn.

The validity of this certificate can be verified at www.qro.org. This certificate of registration remains the property of QRO Certification LLP and shall be returned immediately upon request.

India Office : QRO Certification LLP

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A1 Polymers



Get in Touch with us

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