

SHORE

Auto Rubber Exports Pvt Ltd



A TVS MOBILITY Group Company

Rubber and
Silicone Hoses,
Rubber Moulded Parts
for the Automotive, Rail,
Marine, Industrial &
Off-Highway Sectors...



✓ IATF16949:2016 ✓ ISO9001:2015 ✓ OHSAS 18001:2007 ✓ ISO14001:2015 ✓ STAR EXPORT HOUSE

Where Complexity Meets Reliability...





Engineered For The Global Market

Shore Auto Rubber Exports Pvt. Ltd. specializes in manufacturing Rubber and Silicone Hoses, mainly for Coolant, Charge-Air, EGR, and Adblue applications. Years of expertise, Production facilities in India, and a well-knit Distribution Channel across the globe has earned Shore Auto a worthy reputation for Quality, Cost and Delivery.

Shore Auto Rubber Exports Pvt. Ltd. is a subsidiary of Sundaram Industries Private Limited, which in turn is a part of the TVS Mobility Group of Companies. The TVS Mobility Group is a large Indian conglomerate into various manufacturing businesses, supply chain solutions and distribution of automotive components and automobiles worldwide, with a turnover of over US\$2 billion. Within Sundaram Industries, TVS Rubber supplies tailor made rubber and rubber-metal bonded products to automotive, defense, railways, textile, mining, construction and other industrial sectors.

Shore Auto has two dedicated factories; one for Silicone Hoses, and the other for Organic Rubber Hoses. Spread over 6000 square-meters, our facilities are fully integrated, with state-of-the-art laboratories to back up our manufacturing.



Our Supply Chain

We consciously use Branded Raw-Materials from reputed Suppliers globally, such as Elkem®, Momentive®, Heathcoat®, Shin-Etsu®, Chemours®, and Wacker®

- In-house engineering team for customer consultation on design and materials to be used
- Conversion of complicated designs with multiple connections, to functional single-piece hoses
- Strict scrutiny during the APQP and PPAP processes, to decide on the FMEA and Control Plans
- Endeavour to maintain "0" PPM levels at customer-end





Our Commitment

Our dedicated team keeps thorough checks on the Incoming, In-process, and Outgoing Quality. Raw materials are checked, and records of each batch are maintained. There is a Statistical Process Control mechanism in place for hoses, while they are in production. Based on the in-process SPC, Corrective Actions are being taken on a continual basis to achieve 6-sigma levels across the full range of products.

FINISHED PRODUCTS ALSO GO THROUGH STRINGENT CHECKS, SUCH AS:

- ♦ 100% visual checks
- ♦ Dimensional and Pressure tests as per a sampling plan
- ♦ Inspection of 'printing' requirements of the Customer
- ♦ Other checks as required by the customer, either 100%, or as per a sampling plan
- ♦ Random 'surprise'/'Dock' Audit

We also have a full-fledged Traceability system from Raw material to Finished-goods, and the Lot numbers are even printed on the hoses on customer demand. The traceability system is also backed up on our ERP systems.





Dedicated Cells for OEM Clients

We have dedicated cells for different product groups; for example, in our EGR hose cell, we have the capability of manufacturing 5000 hoses per day. These hoses are made using High-Temperature Silicone Rubber, with an Inner liner of Viton® (FKM), and Meta-aramid reinforcement. These EGR hoses work continuously at 250°C (482 Fahrenheit), with resistance to Diesel Exhaust Gases. Continual efforts are being made in these cells to increase efficiencies via Automation / Kaizen.



The Latest Changes And Developments

- Now, you can buy Silicone Hoses with inner lining of Fluorocarbon (FKM), in a smooth/shiny outer finish. Earlier, we used to have only the 'textured' finish option for the FKM-lined Hoses.
- In-house Crimping facilities for installing End-fittings/Quick Connectors & Clamps in Metal and Plastic.
- For Wrapped Hoses with critical Outer-Diameters, we can calibrate the Outer-Diameter after producing the hoses thereby, keeping very tight tolerances (for e.g. for HENN® crimping tolerances).
- Our Railway and Marine Hoses now come with type-approval (on the finished product) for EN 45 545 - 2 and SAE J2006-R3 respectively.



Fuel-Cell Silicone Hoses

Hydrogen Line:

For Hydrogen filling, we have a special Silicone Hose with a Black impermeable Liner

OPTIONS:

- SS wire reinforcing ply for heavy "positive" or "negative" pressure
- Anti-abrasion external sleeve: for protection if the hose outer surface is in contact with adjoining parts
- Location and Clamp marking: For guiding the mating parts or clamp

- **Water Line and Oxygen Line:**

This hose has been specially introduced to eliminate the issue of contamination of the fluid or air carried by the hose, from trace level extractable materials found in the conventional silicones; for e.g. Siloxanes. The Shore-FC range finds usage in various sectors, including Motor-sport, Marine, Truck/Bus, Rail and Industrial sectors, wherever the risk of contamination needs to be reduced drastically.

Hence, the clear liner ensures that the purity of the air/fluid being transferred doesn't get compromised.

Unless otherwise stated, our standard Reinforced Silicone Rubber Hoses have 3 plies of Polyester reinforcement – this applies to all hoses up to an Internal Diameter of 50mm. For larger diameter hoses we use 4 plies of the same reinforcement to provide better pressure resistance.

Our reinforced silicone hoses undergo extensive physical, chemical, and dynamic testing to perfectly match industry needs.

For OAT and hybrid OAT coolants, please inform us in advance, so that we can quote accordingly.

- Temperature range: -56°C to +180°C
- Meets or Exceeds requirements SAEJ20 R4 Class A
- US FDA 21/177-2600 compliant
- Flame-resistant UL 94-HB compliant
- REACH and ROHS compliant

NOT SUITABLE FOR

non-polar liquids such as hydrocarbons, mineral oils, and greases. Strongly attacked by concentrated acids and alkalis, particularly by oxidizing acids such as sulfuric or nitric acid. Also, Silicone Rubber is not suitable coolants containing high-concentration of ethyl-hexanoic acids or coolants with very high pH levels.

Available in a host of colors (specify the RAL code # in your inquiry ...as simple as that), but the inner-lining will always be clear/translucent.

OPTIONS:

- SS wire reinforcing ply for heavy "positive" or "negative" pressure
- Nylon wire (non-conductive) for heavy "positive" or "negative" pressure
- Anti-abrasion external sleeve: for protection if the hose outer surface is in contact with adjoining parts
- Location and Clamp marking: For guiding the mating parts or clamp





Silicone Coolant Hoses

Shore Auto offers Silicone Coolant Hoses in a range of shapes, colours and sizes. Unless otherwise specified, our standard blue Silicone/Polyester hoses meet the requirements of SAE J20 R1 Class A. The hoses generally have 3-4 plies of Polyester fabric, but the # of layers can be increased/decreased depending on the working pressure requirements.

- Temperature range: -56 to + 180 degrees Celsius (-58 to + 356 Fahrenheit).
- Good resistance to weather and ozone, and resists corrosion from coolant and heat transfer
- Available with the option of Fluorosilicone or FKM inner lining, for added oil/acid/fuel resistance.



Euro VII ready High Temperature Silicone Hoses for Organic-Acid- Technology Based Coolants:

With rising under-the hood temperatures and pressures under the upcoming Euro VII regime, the Industry prefers Silicone Hoses.

However, the drawbacks of Silicone are as follows:

- 1 Not resistant to environment with very high pH levels (even if lined with Fluorosilicone)
- 2 Not compatible with Sodium or Potassium 2-ethylhexanoate and ethylhexanoic acid

Hence, Shore Auto has launched a new hose, with a specially formulated inner-layer, to withstand against permeation of these extremely harsh OAT coolants and their fumes. All RAL colours are available; however, the inner lining will always be Black.

Please refer to SHORE BOLT+, on the adjoining page for more info



Hoses for 'Organic-Acid-Technology' Coolants



Extended life anti-freeze coolants which are extremely corrosive in nature, require hoses of specially designed materials. Using normal blue coolant hoses of the standard material for these coolants, will result in pre-mature failures.

The protective layer laid by Pure OAT coolants deplete only very slowly. Coolant life is typically between 200,000 to 400,000 kilometers.

Shore Auto offers three options for resistant to OAT coolants. They are:

SHORE BOLT :

4-ply reinforced Silicone. The 'special' reinforcement is capable of withstanding the gases which permeate the silicone liner, and can damage the 'polyester' fabrics. Hence, the liner and the fabric are designed to withstand these gases for extended periods. Typical temperature range: -50 to + 215 degrees Celsius.

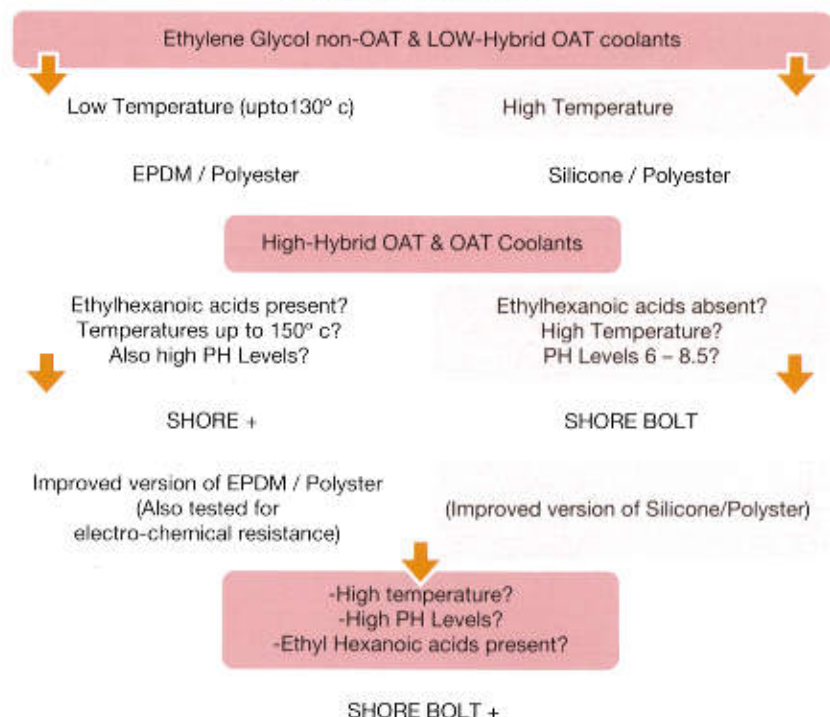
SHORE+ :

A special grade of EPDM reinforced with 1-ply Aramid. This option can only withstand -40 to + 150 degrees celsius; however, it scores over the SHORE-BOLT, when it comes to resistance to potassium/sodium 2-ethylhexanoic acids, which are sometimes present in OAT coolants. Wrapped option also available with multiple fabric layers.

SHORE BOLT+ :

The SHORE BOLT+ is designed with an impermeable inner liner, which can give the hose an even longer life than the SHORE BOLT, as the gases that can permeate the 'silicone' liner, cannot permeate this special 'inner' liner. The common mis-conception in the market is that an inner liner of Fluorosilicone adds to the protection. However, as per our testing, potassium/sodium 2-ethylhexanoic acids deplete the Fluorosilicone liner also. Our 'special' inner liner, hence, has been designed to withstand the harshest of chemicals/gases. Typical temperature range: -25 to + 225 degrees Celsius.

All sizes in straights, straight reducers, elbow 90 degree, elbow 45 degree, elbow 135 degree and 180 degrees are available. We will also be glad to develop bespoke shapes as per your requirement/design.



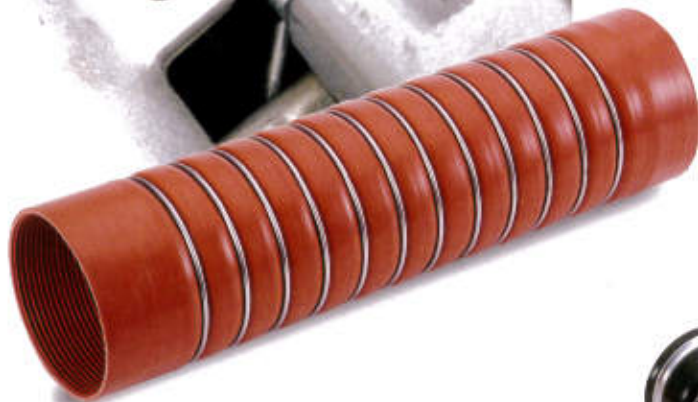


Charge-Air-Cooler / Air-Intake Hoses

The hoses are ideal for connections between engine mounted charge air cooler system parts.

Air-Intake Hoses are also used to deliver pressurized intake air to the charge air intercooler and intake manifold.

- They come in a range of straight, shaped or convoluted shapes, as required. The convoluted shapes are required when there are slight mis-alignments during fitment or functioning. The hoses are flexible enough to endure the vibrations caused due to these misalignments/ compressions/3-axial movements.
- Temperature range : -56 to + 250 degrees Celsius (-68 to +482 Fahrenheit) if reinforced with meta-aramid, or



- Temperature range : -56 to + 180 degrees Celsius (-68 to +356 Fahrenheit), if reinforced with Polyester)
- Available with the option of Fluoro ilicone or FKM inner lining, for added oil/acid fuel resistance. Hoses with Metal fittings and Crimped ends also can be developed as per your requirement. In house test rig available for life-cycle testing of the hoses (cyclic pressures between 0 and 3 bars, while maintaining temperatures of up to 220 degrees Celsius (428 Fahrenheit), inside and outside the hose.)





Epdm Radiator and Air-cleaner Hoses

Automotive and Industrial – Suction / Vacuum hoses, Radiator hoses, Air & Water hoses. We supply EPDM hoses in a wide range of standard and customized shapes and sizes, with different fabric reinforced options. We also have EPDM corrugated (convoluted) hoses, for air-cleaner applications in Automotive Filter Assemblies. These hoses have a higher than usual bend radius, for trickier connections, and high 'vibration' and

pressure' resistance.

- The continuous service temperature of EPDM hoses is -30 degrees C to +120 degrees C maximum (-22 to +248 Fahrenheit), with peak temperatures of 150 degrees C (302 Fahrenheit)
- We also supply EPDM-Peroxide cured hoses, where exceptional compression set and heat resistance is needed.

(Also available in Electro-Chemical resistant option as per SAEJ1684).

Other Organic Rubber Hoses:

We also supply Hoses for Air/ Water/ Fuel/ Oil/ Acid Transfer in a range of materials like Chloroprene (CR), NBR-PVC, Nitrile (NBR), Vamac®(AEM), Poly-Acrylic (ACM), HNBR, Hypalon®, Viton®/ FKM, and CPE. The hoses can also be in a combination of materials, for example, inner Nitrile and outer Neoprene; or inner Nitrile and outer Hypalon.

The fabrics used to reinforce the Hoses are Polyester®, Kevlar® and Meta-Aramid. Metal Wire can also be used to reinforce the Hoses.



Flame-retardant Silicone Hoses for the Railway Industry

Light-weight, Low Pressure custom-built hoses for the Railways

- Hoses used for Air-conditioning, Heating, Ventilation, Radiator Coolant, Brake Cooling, Roof drainage and Engine applications
- Extremely low smoke emission / smoke toxicity
- Temperature range : -56 to +250 degrees Celsius (-68 to +482 Fahrenheit) (depending on material and construction)



Type Approval for Fire-resistance received from **LAP**

These hoses have been tested and approved for "HL1" + "HL2" for R22 and "HL1" + "HL2" for R23; as per UNI EN45545-2:2020. Since the hoses are reinforced with Meta-aramid, the working temperature limit is +200 deg C (+392 deg F) continuous; and 220 deg C (+428 deg F) peak."

Silicone Hoses are also available in "HL3" approved compound as per EN45545-2, on demand.

Also available in EPDM Rubber in "HL3" approved compound as per EN45545-2 (fabric reinforced and non-reinforced options).



Marine Wet Exhaust Hose (SAEJ2006 – R3)

- Shore Auto Rubber Exports offers a range of high end silicone Straight / elbow / bellow Hoses for use in Marine Applications
- Exceeds SAE J2006 – R3 requirements (Third party certification available)
- For usage temperature up to 180 degrees centigrade, the hose is 4-6 ply Polyester reinforced silicone
- For higher temperatures up to 260 degrees centigrade, the hose is 4-6 ply Meta-aramid reinforced silicone

Also available in EPDM Rubber as per DIN73411 / SAEJ20 Class D



Certificate No:
LR20001369TA



Moulded Sealing Products

Different fluids require different polymers and elastomers for compatibility. Similarly different working conditions call for different polymers and elastomers to be effective. Similarly different temperature and other working conditions call for different polymers and elastomers to be effective.



Abrasion Resistant Moulded Components

In various applications, rubber is bonded to different metal substrates for the purpose of sealing, cushioning, anti-vibration and anti-abrasion. It is finally the rubber that bears the brunt of the sealing, cushioning and abrasion resistance, while the metal acts as the bearing surface to rubber. For all our bonding requirements, we use Chemlok® as are preferred adhesive.



Assorted Moulded Rubber Products

Assorted rubber products custom moulded to customer requirements are also undertaken with precision on our Injection, Compression and Transfer moulding machines. These products include Bellows, Plugs, Seals, Diaphragms, Suction Cups, Mats, etc.



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