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# The RMWA Journal

GUJARAT'S FIRST RUBBER MAGAZINE

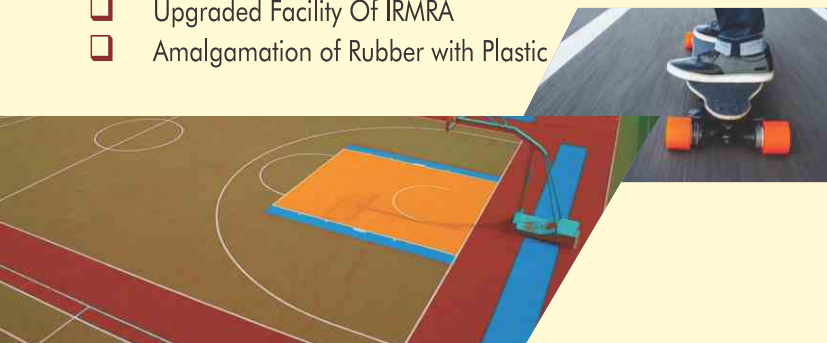
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## INSIGHT ON RUBBER



### In this edition

- ☐ Basics of Rubber-Polymer for User's Perspective.
- ☐ Failure Analysis of Polymer and Rubber Materials
- ☐ Basics Injection Moulding Machines
- ☐ Overview of Moulding Processes
- ☐ Upgraded Facility Of IRMRA
- ☐ Amalgamation of Rubber with Plastic



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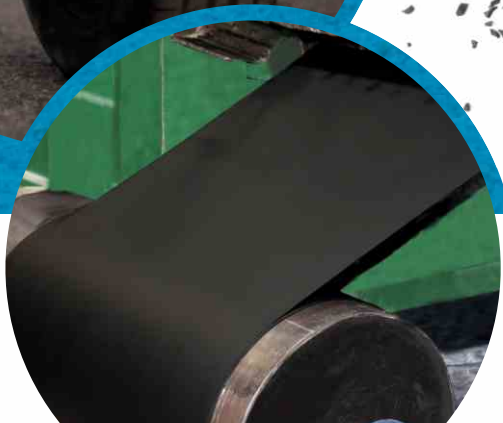


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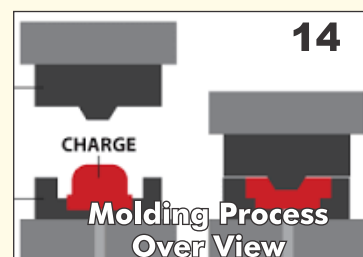
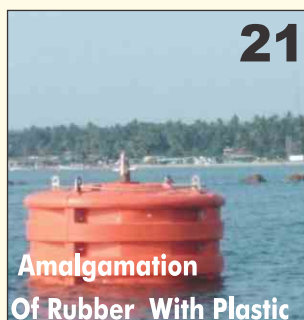
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## From the Vice President Desk

**Rupen Soni**  
Vice President, RMWA



Dear Readers,

I feel honoured to address all esteemed readers of RMWA journal which has successfully brought together people from all different sectors of rubber industry on to the same platform where knowledge and information exchange is taking place easily. I take this opportunity to thank all the members of Rubber Manufacturer's Welfare Association (RMWA) community members whose hard work and perseverance has made this journal a success. At this point I feel exuberant at the accomplishment of our RMWA journal which has paved-in a wonderful path for itself with assistance from all our patrons'.

RMWA has been successfully able to share and exhibit new developments & innovation which has been taking place in rubber industry through conferences, workshops and exhibitions/trade fairs. Upcoming IRM 2018 (Indian Rubber Meet 2018) presents another such opportunity of information sharing.

## “Rubber Cultivation in Gujarat”

As I further quote our Honourable Chief Minister of Gujarat Shri Vijay Rupani “Gujarat is a land of opportunities” and as our state indeed is being extended support to encourage R&D in rubber cultivation in Gujarat. The need of the hour requires us to join hands to come up with an integrated project for rubber production in the state by formulating strategy to conduct research in natural rubber cultivation.

The articles shared time to time in this journal provides an insight to all the small and medium sized companies to grow and stay equipped with latest developments in our arena. I hope that attempt of this issue of RMWA journal meets with colossal success; with much dedicated efforts put in by the team members to get this issue out.

Wishing all our patrons' good luck and cheers!

Best Regards,  
Rupen Soni  
Vice-President (RMWA)



## Editor's Note

Manoj Shah  
Editor, RMWA

Manoj Shah



## “Theory of Every Thing”

Dear Readers,

Today let us talk something different from rubber related topics.

While reading a book “THEORY OF EVERYTHING” written by scientist Stephen Hawking I understand that how thinking ideas are evaluated chronologically from Aristotle [340 year BC] to Newton [1687] to Einstein [1915] to understand the universe. This is true in every scientific field.

Our presiders left some gift to us in form of ideas or invention. These are used as basic raw material by next generation to move the benefit to future mankind. For example, A cart wheel turning into aeroplane or A static electric charge turning into electricity. This attributes to reasoning mind of men who choose to think or work differently. In the process they may suffer but they do not give up.

I can not resist myself to share a small paragraph from a book THE FOUNTAIN HEAD written by AYN RAND.

“Man can not survive except through his mind. He comes on earth unarmed. His brain is his only weapon. Animal obtain food by force. Man has no claws, no fangs, no horns, no great strength of muscles. He must plant his food or hunt it. To plant, he needs a process of thought. To hunt he needs weapons, and to make weapons – a process of thought. From this simplest necessity to the highest religious abstraction, from the wheel to the skyscraper, everything we are and everything we have comes from a single attribute of man – the function of his reasoning mind.”

I have immense respect for all men known or unknown who carved a new path to walk for their future generation.

Happy Reading ....



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## Basics Of Rubber / Polymer For User's & Beginners Perspective

Manoj Shah  
Nitro Polymers

### POLYMERS

- Polymers mean material like rubber, plastic & fibres.
- Single monomer is basic chemical unit.
- Polymerization turns monomer to polymer
- Single monomer                      Polymer [neoprene]
- Two dissimilar                      Co-polymer
- monomer                      [ nitrile ]
- Three dissimilar                      Ter-polymer
- monomer                      [EPDM]

STATE OF POLYMER	THERMOSETTING	THERMOPLASTIC
RIGID	EPOXY/ PF RESIN/ABONITE	POLYSTYRENE / PVC
FLEXIBLE	HIGHLY CURED RUBBER	POLYTHELENE / EVA
RUBBERY	LIGHTLY CURED RUBBER	POLYURATHANE / HSR

### ELASTOMERS

- Rubbers or elastomers are separate class of polymers because they contain some unsaturation for reaction with sulphur to form link with other chain.
- In general elastomer means those polymer which are capable of gaining original position when load is removed. E.g. natural rubber, EPDM, nitrile, neoprene etc.
- Rubber technology converts elastomers to commercial rubber product.
- Addition of different chemicals are required to convert elastomer into elastomeric compound
- These chemicals are broadly classified as fillers, softeners, curing agent and anti oxidants.
- Such elastomeric compounds are converted into commercial products by application of heat & pressure. The process commonly known as vulcanization.
- Sulphur, peroxide & sulphur bearing organic compound are used as vulcanizing agent.
- To explain nearly 16 types of elastomer we try to simplify them into three class.
- [1] general purpose [ carbohydrate rubber ]
- [2] solvent resistant elastomer
- [3] heat resistant elastomer
- We will understand this with individual tables in next three slides

## General purpose rubber

A.S.T.M. DESIGNATION	NAME	TYPE / TRADE NAME	REMARKS
NR	Natural rubber	polymer	High physical properties
SBR	Styrene butadiene	Co-polymer / krylene / ameripol	1 <sup>st</sup> synthetic rubber
IR	Polyisoprene	Polymer/ natsyn	Synthetic NR
IIR	Butyl rubber	Co-polymer / enjay / polysar	Best air retention
EPDM	Ethylene propylene	Ter-polymer/ keltan / nordel	Saturated back bone structure
BR	polybutadiene	Polymer / cisamer / cisdene / solprene	Excellent abrasion resistance & rebound resilience

## Solvent resistance elastomers

A.S.T.M. DESIGNATION	NAME	TRADE NAME	TYPE	REMARK
T	Polysulfide rubber	thiokol	Co-polymer	Ozone, U.V. light & aliphatic solvent resistance
NBR	Nitrile rubber	Hycar , krynac, perbunan etc.	Co-polymer	General purpose oil resistant
CR	Poly-chloroprene rubber	Neoprene, skyprene, bayprene etc.	polymer	Moderate oil & weather resistance
AU , EU	Poly-urathane	Adiprene, texin vibrathane	polymer	High abrasion resistance, high tensile strength
CO & ECO	Epi-chloro hydriene	hydrine	Polymer & co-polymer	Ozone, oil, heat resistance & low air permeability.

## High heat resistance elastomers

A.S.T.M. DESIGNATION	NAME	TYPE & TRADE NAME	REMARK WORKING RANGE
MQ	Silicon rubber	Polymer / silastic	180 *C / 220* C
CSM	Chloro- sulfonated poly-ethylene	Co-polymer / Hypalon	150* C / 175* C
ACM	Poly-acrylate rubber	Co-polymer / vamac	130* C / 150* C
FKM	Fluorocarbon rubber	Polymer / viton	200* C / 250* C
FFKM	Per-floro elastomer	Polymer / kalrez	Upto 316* C





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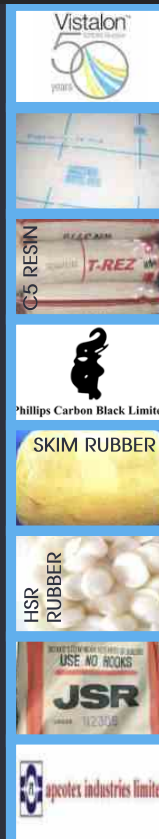
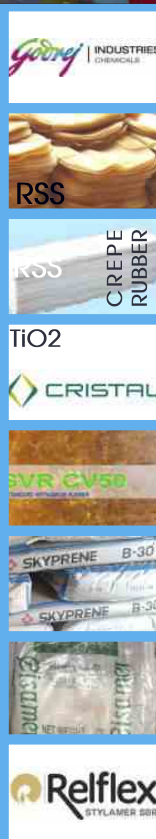


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## BROAD BASE SUITABILITY OF ELASTOMER

property	NR	EPDM	NBR	CR	MQ	CSM	FKM
hardness	30/90	40/90	25/95	40/90	30/80	40/95	60/95
Gum T.S.	E	P	P	E	P	G	G
Com.set	G	G	G-E	G-E	E	G	G
rsInce	E	G-E	G-E	G-E	E	G	G
Dil. acid	P-G	E	G	E	G	E	E
Con.acid	P-G	E	P-G	G	P	E	E
Aph sovt	P	P	G	G	P-G	G	E
Aro sovt	P	P	P-G	P	P	P	E
Oil- gas	P	P	E	G	P-G	G	E
water	E	E	E	G	P-G	G	E
weather	G	E	G	E	E	E	E
ozone	P	E	P-G	E	E	E	E
heat	G	E	G	G	E	E	E

## CONSUMER'S CONCERN

- Share enough facts with manufacturer about service condition of rubber product.
- Consider factors like temperature, pressure, fluid in contact, and environment.
- Working in static or dynamic condition.
- Permissible tolerance in dimensions.
- Store rubber products preferably wrapped in polythene covers.
- Keep rubber products stored in unstrained position. Keep it lightly dusted with talc.
- First in first out inventory for rubber products is essential.
- Encourage discussion about failure of product with manufacturer.
- Fix physical test specification for compound / product with manufacturer.

## Information of Upcoming World wide Rubber Exhibitions



**RubberTech  
Vietnam 2018**

### \*Rubber Tech Vietnam\* and \*Rubber Tyre Vietnam 2018\*

6<sup>th</sup> International Exhibition and Conference on Rubber Industry & Tyre Manufacturing in Vietnam during 13-14-15 June 2018.



**RubberTech  
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OCTOBER 24 - 27, 2018

### \*Rubber 2018 Istanbul\*

10<sup>th</sup> Rubber 2018 Istanbul Rubber Industry Fair at Tuyup Fair Convention & Congress Centre, Istanbul during 24-25-26-27 October, 2018.

# Failure Analysis Of Polymer And Rubber Materials

## Kartik Srinivas

Principal Engineer

Advanced Scientific and Engineering Services (AdvanSES)

Polymeric materials like rubbers cure or harden (set) into a given shape, generally through the application of heat. Curing also known as vulcanizing is an irreversible chemical reaction in which permanent connections known as cross-links are made between the material's molecular chains. These intra-molecular cross-links give the cured rubber material a solid three-dimensional structure.

Rubber products are designed using engineering principles of loads and deflections applied to a certain volume of material. The use of engineering principles in the development of rubber products provide an application envelope in which the products are expected to perform. Most of the products do provide the required services for satisfactory lifetimes, however failures do occur. Failures occurring under field services conditions are expensive and it becomes imperative to identify the cause and rectify it as soon as possible. The failure mode of polymers sets limits to the process of engineering design.

Understanding the actual reason for failures is absolutely required to avoid recurrence and prevent failure in similar components, systems, structures or products. The analysis should also help with the understanding and improvement of design, materials selection, and manufacturing techniques.

Failure analysis consists of investigations to find out how and why parts and components failed.

The four major reasons for engineering failures are;

- 1) Poor and improper design features,
- 2) Incorrect use of material,
- 3) Defects introduced during manufacturing and
- 4) Service conditions.

Traditionally, failure analysis methods have focused on laboratory testing and chemical analysis of components to fully understand why components fail. The evolution of faster computers, as well as the growth of available material information, has made computer-based failure analysis using techniques like Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) more feasible and accessible.

Figure 1 shows the flowchart of a systematic

approach to a typical failure analysis study. The process of failure study invariably starts with observing the working of the component under service conditions and gathering the facts about the conditions. One can identify patterns in the behavior of the material or component under service conditions and develop a technical hypothesis based on the observations. Once all the observations have been recorded, a failure hypothesis is generated that fits all the observations. This failure hypothesis is now tested to make sure that all the facts and observations fit into the failure narrative. Upon verification and validation of the tested hypothesis the conclusions are formed and finalized.

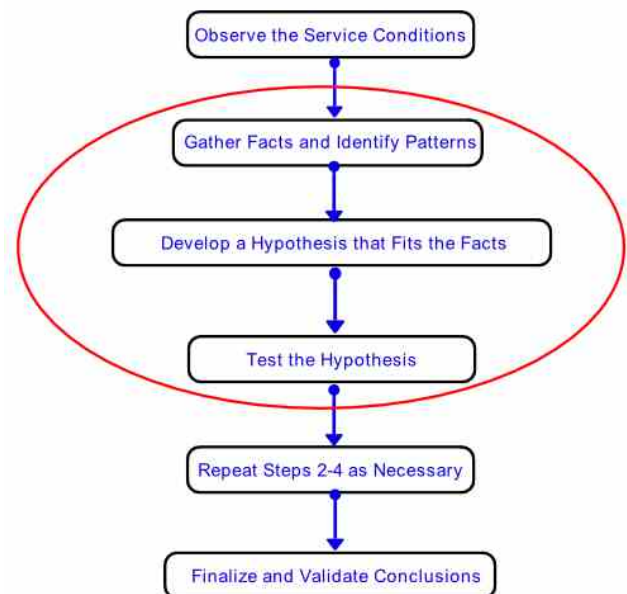


Figure 1: Systematic Approach to Failure Analysis

The failure analysis procedure calls for defining the function and operating condition of the elastomer component and establishing a failure criterion clearly quantifying under what performance and service conditions the component can be declared as having failed. The failure criterion may be an unacceptable change in a property and this change may cause a particular failure. Abnormal changes in the values of properties like stress relaxation, tear resistance, stiffness and modulus change, dynamic properties, etc can be defined. Then next step is to characterize and identify the underlining physics and mechanisms involved in causing this changes. Establish the rate of change by accelerated laboratory testing at different levels of severity and different time intervals. It is important to keep the accelerated test conditions similar to the service conditions and perform the test at atleast four (4) temperatures higher than average service temperature. These four conditions can be suitably used for life predictions using Arrhenius technique.

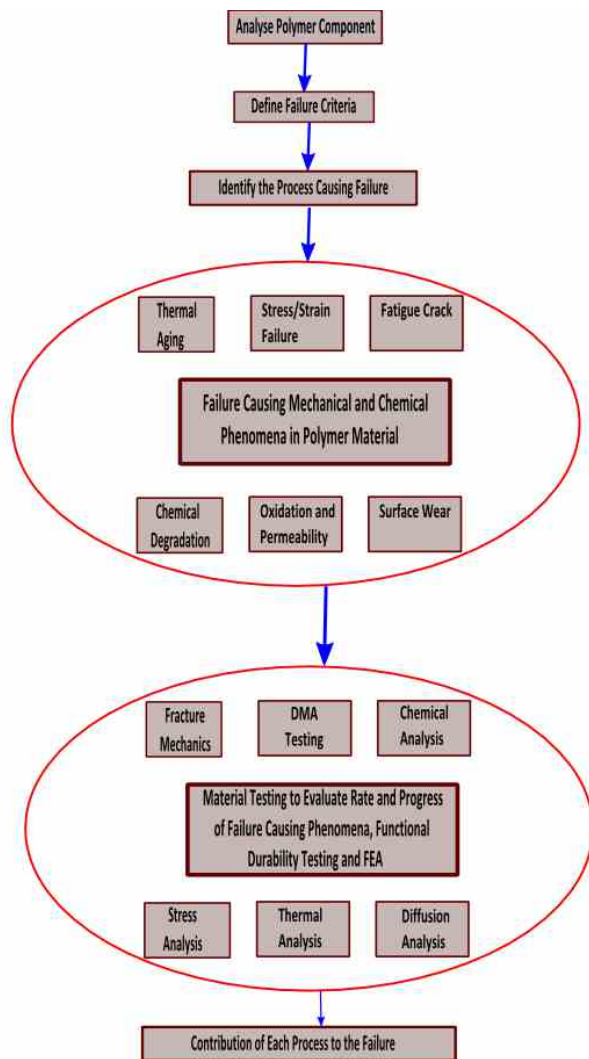


Figure 2: Failure Analysis

Any investigation in failure analysis results in large amount of data regarding the sample history, test data, analysis and discussion of results. ASTM E860-2013 specifies a protocol for the examination of forensic evidence pertaining to failure analysis. This well developed method can be taken as a template to follow and carry out the failure analysis procedure as described. This establishes a well defined protocol showing the steps followed to collect, document, study and analyze and present the results for failure analysis on material samples and components.

The following shows in brief the information from ASTM E860-2013 specifications;

- 1) Chain of Custody Documentation
  - 1) Copies of receiving and shipping documentation
  - 2) Pictures of materials as received
- 2) Physical Evidence Documentation

- 1) Labelings
  - 2) Samples with benchmarks
  - 3) Steps in dissection
  - 4) Steps in Testing
  - 5) Test equipment number, calibration etc.
- 3) Photo Documentation
    - 1) Digital
    - 2) SEM, TEM etc.

The approaches discussed in flowcharts 1 and 2 can be applied to determine failure analysis of polymer components used in engineering applications. It is important to define failure modes and failure mechanisms for parts under service conditions. It is also critical to establish validations between field and laboratory samples using different physical and chemical analysis techniques. The primary rate determining mechanism of component failure can be used to predict failures using the accelerated functional tests.

The failure mode analysis effort conducted on polymer materials provides a good materials and process database for design and FEA engineers who can optimize the product without the need for expensive trial and errors thus reducing cost and time to market.

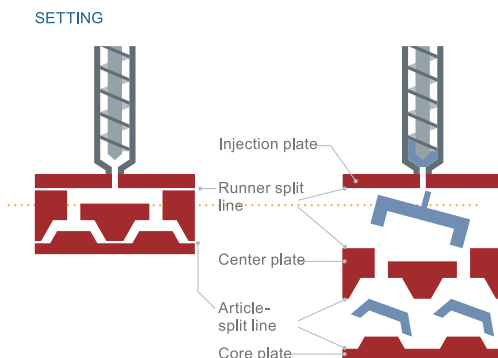
## References:

1. Leyden, Jerry., Failure Analysis in Elastomer Technology: Special Topics, Rubber Division, 2003
2. Baranwal, Krishna., Elastomer Technology: Special Topics, Rubber Division, 2003
3. Srinivas, K., and Pannikottu, A., Material Characterization and FEA of a Novel Compression Stress Relaxation Method to Evaluate Materials for Sealing Applications at the 28th Annual Dayton-Cincinnati Aerospace Science Symposium, March 2003.
4. Srinivas, K., Systematic Experimental and Computational Mechanics Failure Analysis Methodologies for Polymer Components, ARDL Technical Report, March 2008.
5. Dowling, N. E., Mechanical Behavior of Materials, Engineering Methods for Deformation, Fracture and Fatigue Prentice-Hall, NJ, 99

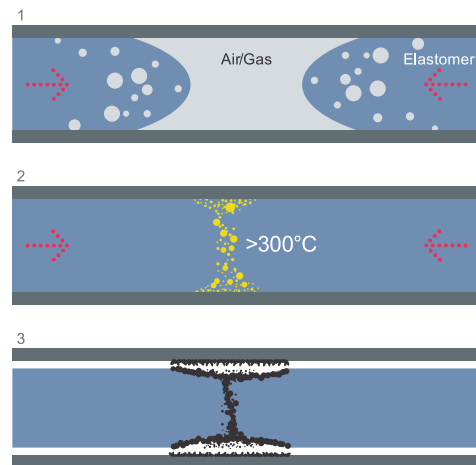
# Injection Mould

- Desma

Injection moulds can be distinguished by the number of individual plates by which articles and runners are formed. Generally, as few individual plates as possible are used, to keep the costs low and to minimize flash and burr. On the other hand, the air trapped in the cavities must be able to escape safely when elastomer is injected. Trapped gases are compressed during injection if the mould is not equipped with adequate venting points. This leads to defects in the product. The resulting compression heat can also cause thermal damage to the compound (diesel effect). In this case, there are also residues on the steel shapes. The number of necessary individual plates and thus of the venting / split lines therefore chiefly depends on the geometry of the article and the injection (mould filling pattern).



DIESEL EFFECT



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Standard cold runner block  
[www.rmwa.in](http://www.rmwa.in)

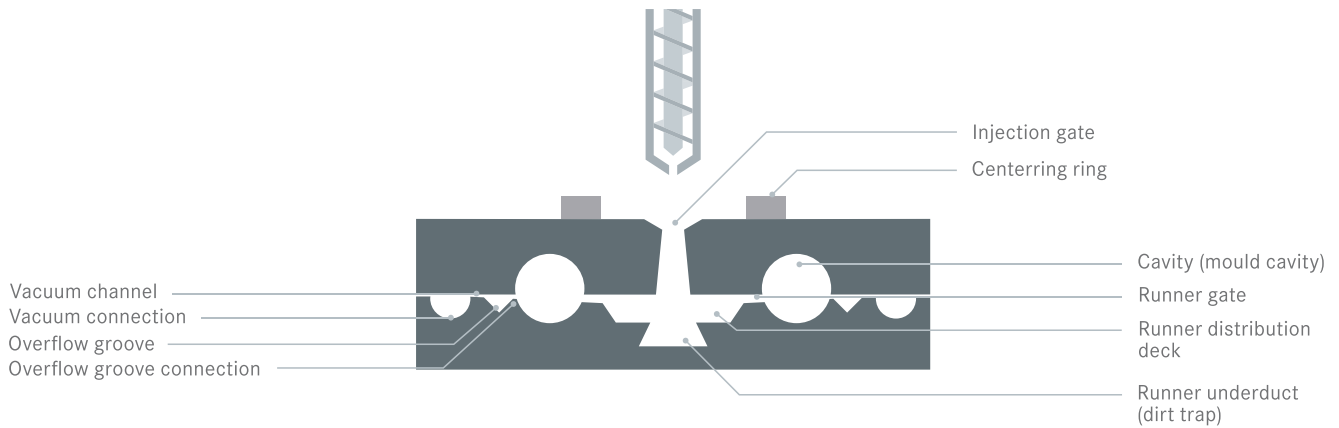


Insulator mould



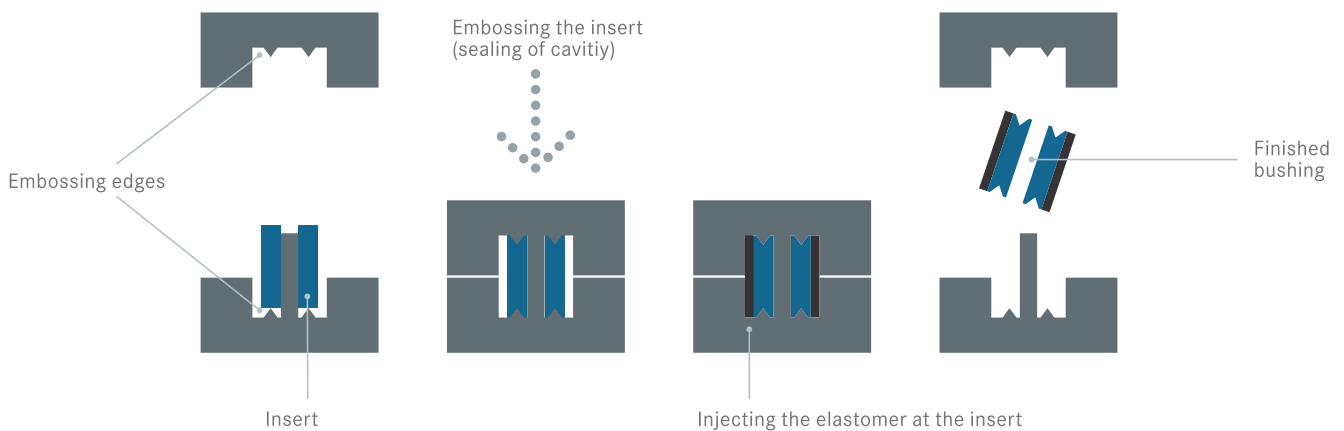
## VACUUM

To support venting, a vacuum channel that encloses the cavity area can be inserted into the split line. Prior to starting injection, a high vacuum is produced via this channel in the area of the cavities. This „suction“ continues during the injection and dwell phase to prevent positive pressure to build up. The efficiency of the vacuum is mainly determined by the tightness of the mould, the vacuum applied to the connection, and the connection to the cavities (pressure loss). With common technical means, you can reach an absolute pressure of approximately 0.05 bars (95 % vacuum).



## INSERTS

Moulds that are used for injecting around inserts are usually equipped with embossing edges. When the closing pressure builds up, these edges are pressed into the insert. This ensures that (even with varying dimensions of the inserts) the injected compound does not get into areas that shall remain free of elastomer.



## BUMPING (VENTING STROKE)

The bumping function is used if conventional measures, such as slow injection or vacuum, do not permit sufficient venting to be achieved. Bumping is possible during the injection, dwell, or heating phase with the split line to be vented is being minimally opened. If bumping takes place during the injection process, the filling operation is interrupted for a short while.

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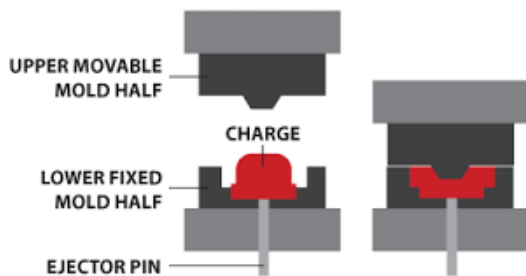
# Molding Process Over View

## Molding Processes – Making the optimal choice for your molding application

Depending on the material, volume, size and shape of your molded parts, using the optimal molding process can reduce your operating costs and improve your part quality.

Here are some of the most commonly used hydraulic press molding processes:

### Compression Molding



This is the most widely used production method for molding rubber products. It is ideal for low to medium volumes and can be used for a large variety of part sizes and materials, including high cost materials and applications that demand extreme hardness. It is a very useful molding process for forming bulky parts, gaskets, seals and O-rings. It is also a very efficient, low waste method that offers the simplest process, lowest investment and greatest flexibility. Compression molding generally results in lower amounts of scrap. It does not consume excess rubber in the runner of an injection mold, or in the pot of a transfer mold.

The most commonly viewed drawbacks to compression molding are longer cycle times and costly labor costs. However, both of these can be addressed to equal or surpass the injection molding process. Cycle times for compression molded parts using preheated preforms can be less than for

injection molded parts. Automated preform, loading/unloading, and post handling equipment can be integrated with a compression press to nearly equal the labor cost of injection.

### Compression molding is best suited for:

- Low to medium production volumes
- Medium to large sized parts
- Thick cross-sectional parts
- Low to high durometer materials including very high hardness – Ideal durometers 60A-90A
- More expensive rubber formations and other high cost materials
- Molders who require quick tooling changeover

### Compression molding advantages over other methods:

- Lowest investment for tooling and machinery
- Shortest mold setup times make a perfect match for short production runs
- Internal stress is minimized, producing less warping
- Ability to process very stiff, high durometer materials
- Generates less waste than other production methods
- Ability to process thin to large thick parts
- Greatest flexibility in molding various part sizes and materials
- Less shrinkage of material leads to greater accuracy of parts
- More cavities per mold are possible as lower molding pressure is required

### Compression molding disadvantages:

- Requires a preform (a pre-measured slug of material)
- Can produce a higher rate of dimensional inconsistency
- Generally produces the largest parting line
- Flash removal requires a secondary operation
- Typically the most labor intensive, but can be automated to nearly equal injection molding.

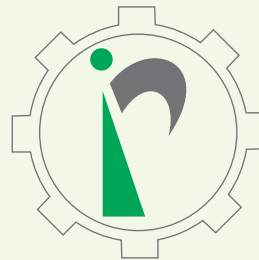
### Other Compression Molding Applications

Compression molding presses are used in virtually

## EPDM, Neoprene and Nitrile rubber extruded products



## Silicone rubber extruded products



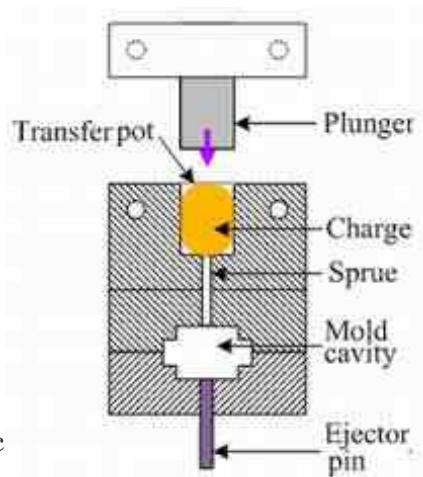
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every molding application from various thermoset to thermoplastics, including laminates and composites. There are many others processes that can use compression presses in a stand only condition, or in combination with auxiliary material dispensing systems.

### Transfer Molding



In concept, transfer molding is a version of injection molding. It provides many of the benefits of both injection and compression molding. Transfer molding allows the molding of intricate parts while providing highly accurate dimensional control for low to medium production volume requirements. The cycle times are generally longer than injection molding, however they can be very cost competitive.

Transfer molding can also reduce the cure time by heating the material before it reaches the mold. The material is forced into a closed mold by means of a hydraulically operated plunger or by using the compressive force of the hydraulic press in combination with a tooling with an internal transfer pot.

Transfer molding was developed to facilitate the molding of intricate products with small deep holes or numerous metal inserts. It is ideal for insert molding because the tool is closed prior to the material being transfer, which limits the amount of

shift with the insert parts.

### Transfer molding is best suited for:

- ❑ Mid range dimensional tolerances
- ❑ Low to medium volume production
- ❑ Small to medium sized parts
- ❑ Delicately shaped parts
- ❑ Low to medium durometer materials
- ❑ Insert molding
- ❑ Colored and translucent compounds

### Transfer molding advantages:

- ❑ Shorter production cycles than compression molding
- ❑ Ability to maintain closer dimensional tolerances than compression molding
- ❑ Excellent uniformity from mold cavity to mold cavity
- ❑ Rapid mold setups
- ❑ Typically less flash than compression molding because the cavity plates are closed
- ❑ For multi-cavity tools, labor cost is lower than compression since only a single pre-form is necessary.

### Transfer molding applications:

- ❑ Low to medium durometer materials
- ❑ Low to medium production volumes – flexibility with part sizes
- ❑ Small delicate parts

### Transfer molding disadvantages:

Higher Investment Cost than compression molding (press, tooling and auxiliary equipment)

Requires a preform (a pre-measured slug of material)

- ❑ Not well suited for filled materials
- ❑ Generates some amount of material degradation
- ❑ Cannot process high durometer materials
- ❑ Tool maintenance costs are typically higher than compression molding
- ❑ Wear of cavities is less than injection molding, but gates and runners erode
- ❑ Labor content typically higher than injection
- ❑ Flash Pad or Pot Pad is excess scrap material



## AN UPGRADED IRMRA INSTRUMENTAL LAB TO MEET THE ADVANCED TESTING NEEDS

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Phone: 022-6787-3200(19 lines), Telefax: 022-2582-3910

IRMRA has reached its glorious landmark of completing 60 years of existence in the year 2018. With the strong foundation and legacy in testing and R& D of rubber and allied material, IRMRA is all set to take a leap to the next level. The technology trends in every field has taken a paradigm shift and rubber fraternity not an exception. With the rise in regulatory and norms to enhance environmental and human safety there have been multiple new standards and tests boosting up. As a premiere R & D and testing lab we have taken all measures to upgrade our facility to cater to the rising test requirements.

Recently we have upgraded the complete set of instrumental technical for rubber and other material analysis like Fourier Transform Infrared Spectroscopy(FTIR), Differential Scanning Calorimetry (DSC), Thermogravimetric Analysis (TGA), Gas Chromatography – Mass Spectrometry (GC MS – MS), Inductively Coupled Plasma (ICP), Mooney Viscometer, Moving Die Rheometer (MDR), Ozone Chamber.

**Fourier Transform Infrared Spectroscopy (FTIR)** is a versatile instrumental technique to characterize material in any form (solid, liquid and powder) and has become an indispensable technique in today's time. It is used in reverse engineering, failure analysis, quality assurance etc. The latest version with advanced library enables us in delivering the results faster and accurate.



**Differential Scanning Calorimeter (DSC)** is used to understand the thermal transitions of the polymer and finds application for characterizing rubber and rubber chemicals. The low temperature properties being very important for rubber material DSC is a useful technique to understand the low temperature of the material. DSC also finds wide application for determining the purity of rubber chemicals, pharmaceutical samples, etc. The advanced version of the equipment is capable of studying the cure kinetics, percentage crystallinity, state of cure and other major and minor thermal transitions.



**Thermogravimetric Analyser (TGA)** is a basic technique to obtain the primary composition of rubber or any polymeric formulation. There are many product specifications which specify the polymer content and ash content as a



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mandatory specification which requires TGA. The industry being driven more towards quality consciousness the demand has been high on testing and meeting the required specifications. The instrumental technique also is used for reverse engineering, failure analysis etc.



GC-MS MS is an advanced analytical instrument and primarily used to identify and quantify the different chemical additives in the rubber and with rising concern and regulations on restriction of various chemicals, the advanced version is equipped to identify any additive even at ppb levels. The latest version of ICP is

also similarly equipped to quantify the presence of any inorganic elements at ppb level. This is used to detect heavy metals such as Pb, Hg, Sb, As, Cr etc. in ppb level. This instrument is also used for forensic analysis and to investigate the failure of rubber products.



The new **Moving die rheometer (MDR)** comes with the MonControl analysis software. Higher accuracy in temperature and torque by typically 30 to 50% due to fully temperature compensated measuring system for test configuration management, data recording, automated.



The **Mooney viscometer** has die configuration standard rotor **Large or Small Rotation Speed 2 RPM** (0.21 radians/sec). Temperature range ambient to 225°C. Types of Test Real time display of Mooney Torque, Temperature of upper and lower dies, Calculation of Viscosity (MI1+4), Scorch, Delta Mooney, Stress Relaxation index Temperature.



**Ozone resistance** is a test to determine the weather/outdoor resistance of the rubber products. An automatic ozone test chamber allows an accelerated test of the effects of ozone to be conducted, by subjecting samples to a quantifiable high concentration of ozone generated by the test machine, while at the same time controlling the temperature, humidity and airflow. The samples are placed under load or subject to cyclic loading for the duration of the test to simulate operating conditions and exposed in a specified ozone concentration and duration. Tests can be conducted by IS, ASTM, BS or ISO test methods.



Product testing being our key strength, recently we upgraded the facility for testing full belt strength. Conveyor belt being critical rubber product needs high precision and good grips to obtain accuracy in results. The machine is equipped with 10 Ton capacity load cell and heavy duty wedge grips and many other additional grips to conduct various types of tests as per IS, ISO, ASTM, JIS and DIN standards.

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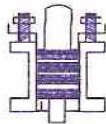
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## Amalgamation Of Rubber With Plastic



### 4 NOS. MOORING SYSTEM INSTALLED IN MAHARASHTRA

We all have duty towards protection of environment. Even as manufacturing companies we are bound to contribute towards environment safety. One such example is of installation of Buoys at the Sindhu Durg Region which is a tourist attraction for Scuba Diving, Snookering and also a prominent place for fishing wherein the network of these buoys act as the safety shield. This region has vast and beautiful marine life harbouring different species of aquatic fishes which is an attraction for the tourists. However frequent boat commutation and dropping of anchors too near to the coral reefs endanger the ecosystem of the coral reef and the aquatic life within. This raised a question to the safety of the aquatic life and diminishing tourists. United Nations Development Programme (UNDP) Project was made addressing this issue jointly with Tourism department and Fisher association. We are proud to announce that our member, Hitech Elastomers Ltd. had been considered for this project and they had successfully executed this project in remarkably short span. Buoys were deployed around the coral reef at a safe distance which acts a shield for the coral reef and the marine species in it. These buoys facilitates mooring and anchoring for tourist and fisher boats at a safe distance thus maintaining the safety of coral reef and also encouraging tourism without hampering the marine life environment.

# Mixing

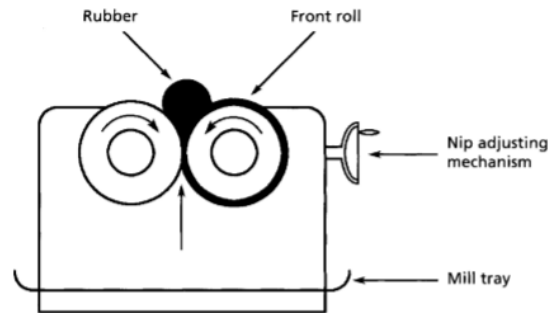
Ronak, B.E.M.E.  
Rubber Technology.

## • Mastication and Mill processing

The key to mixing (in a Banbury mixer or a mill) is to maintain sufficient viscosity to ensure an adequate shearing action, to distribute the non-rubber ingredients into the raw gum elastomer, or to force the raw gum elastomer into the microscopic spaces of each filler particle. Both mechanisms have been hypothesized and one typical mixing sequence might be as follows:

The raw gum elastomer is placed into the nip and allowed to band onto the front roll. In the case of NR, it needs to move through the nip quite a few times to reduce its nerve (elasticity) and to lower its high viscosity (low viscosity grades are available). It then forms a smooth, more plastic, band on the roll. Normally most powders (other than accelerators and sometimes sulfur) are then added. If significant heat is produced, then cross-linking agents and accelerator addition will be delayed to the last part of the mixing process.

In some cases, when excessive heat is produced, it may be necessary to remove the compound from the mill before the accelerator is added, to avoid scorching (pre- vulcanization) . The compound at this point is known as a masterbatch, defined in ASTM D 1566 as a homogeneous mixture of rubber and one or more materials in known proportions for use as a raw material in the preparation of the final compounds. The masterbatch is allowed to cool and subsequently returned to the mill for addition of the accelerator.



If the compound formulation calls for large amounts of fillers, it may be necessary to add small amounts of process aids with the filler to aid dispersion. Oils are then normally poured on incrementally (as are the fillers), after most of the fillers have been mixed in. The art and skill of the mill operator plays a significant part in mixing. For example, he needs to know that some compounds based on CR tend to stick to the mill rolls, which require 'extra' cooling time to reduce this problem. The compounder also plays his part, in such a case, by adding waxy materials to the mix formulation to reduce this sticking. If the mill cooling is adequate and the temperature of the mix (frictional heat) is well below the level that would initiate vulcanization, then the cross-linking agent and accelerators can be added. During the mixing process, the mill operator uses a hand knife, at one end of the roll, to cut through the rubber, remove it, and place it in the nip at the other end, thus ensuring a homogeneous end-to-end blend. If no separate ingredients are visible, and the mixed compound is well blended, it can now be taken off in sheets or strips, cooled if necessary, ready for its journey towards a cured product.

## • Friction ratio

The two rolls have the same diameter but one roll may rotate at a higher rate than the other. The ratio of peripheral roll velocities,  $U_1/U_2$ , is called the friction ratio  $f$  and ranges from 1.0 to 1.4 for most mills. The mill is a batch mixing process. Most of the

rubber accumulates in the entrance region to the narrowest separation of the rollers called the nip. This mass of rubber, the bank, rotates slowly because of the relative motion of the rolls at the surface. The material in contact with the roll surface is dragged into the nip region where the rubber matrix is subjected to high shear rates and shear stresses. The material leaving the nip region will adhere to one of the rolls, depending upon the temperature of the rolls and the composition of the rubber; usually the rubber sticks to the hotter roll. The film adhering to the roller is rotated around and back into the rotating bank at the entrance region. Because there is very little motion along the roll axes, it is necessary to have an operator who periodically folds the sheet on the rolls from end-to-end to ensure good distribution of additives throughout the rubber.

## •Process Additives

Rubbers, especially some of the newer synthetics, are difficult to process at some stage during their manufacture. Some rubbers are tough, somewhat intractable materials which are difficult to mix with the compounding ingredients. Other rubbers have a great affinity for the metal of the mixer chamber and rotors and are difficult to remove after being compounded. Poor release from, and fouling of, mould cavities is a characteristic of some rubbers.

With applied technical experience and the correct process additive, some of the problems of rubber processing may be solved or at least alleviated.

A process additive is an ingredient which is added in a small dosage to a rubber compound solely to influence the performance of the compound in factory processes, or to enhance physical properties by aiding filler dispersion.

### ● The process additive should ideally:

- ☐ aid dispersion,
- ☐ reduce polymer nerve,
- ☐ promote compound flow characteristics,
- ☐ act at a low dosage level,
- ☐ not adversely affect the finished product,
- ☐ reduce power consumption.

Processing additives exist in a variety of types and can be classified generally as :

- Physical peptisers/lubricants
- Lubricants
- Silicone modified processing additives
- Antistick agents

#### Example

Zinc fatty acid salts/soaps  
Fatty acid esters

Amides  
Pentaerithrityl stearate  
Calcium fatty acid amides  
Zinc stearate

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# Corporate Inkling

- Ruma Dubey

SPT Investment Advisory Service P.L.

## Dakiya "Daak" Laya



Where there is creativity, there is no dearth of ideas. Two women, Onaiza Drabu and Prachi Jha are reviving the pleasure of letter writing and reading, literally!

They have started a weely newsletter, Daak. Every weekend a digital postcard is sent to 400 subscribers with a quote, nugget of information or a limerick from little-known stories, artworks and poems by writers, authors and activists who have shaped the Indian subcontinent's cultural heritage.

“Daak” evokes the lost art of letter-writing: a patient, deliberate and thoughtful exercise in articulating your most compelling thoughts, giving us all something interesting and meaningful to read.

The first 'postcard' was sent out in May'17 and it carried a single quote from Salim Ali, written in his own cursive handwriting on a yellowing postcard. He said, “A monsoon ramble through the woods will delight anyone who has the eyes to see and the soul to wonder at the romance and charm of this other world within our world.”

The postcard is sent with a quote printed in cursive on the left side and a few words on the right from Jha and Drabu, offering the context and a brief explanation. They even give a link to the full text of the chosen story or poem.

Since then, they have sent out “postcards” from Kabir, quotes from Arthashastra, even the image of Raja Ravi Varma's Shakuntala, Rabindranath Tagore's poem, Gandhiji's letter to Hitler, AK Ramanujam's love poem for his wife, Bankim Chandra Chattopadhyay's quote



from his first novel – Durgeshnandini.

It's a beautiful venture and great for some us who want to read something meaningful. It's a great way to start come good conversation too.

## Mangolicious:



If you thought the first mangoes in India come from the Konkan belt in Maharashtra, you could not be more wrong. They actually come from South India, Muthalamada in Kerala to be more specific. The harvest is ready to pick as early as February!

The entire town, closer to Palakkad, cultivates mangoes; some 4500 hectares of farm land grows mangoes and it exports Rs.200 crore-worth of varieties a year. This used an entire town growing paddy or rice but due to water shortage, most have shifted to the cash crop of mangoes.

The town grows many varieties – priyor, neelam, chandrakaran, moovandan and it also cultivates mangoes specifically for (a pest-resistant mango used for the first pickle in the south). For the North Indian market, it grows even the famed alphonso along with totapuri, malgoa and banganapalli. You name it and they have that mango!

Traders come as early as August to have a look at the trees, look the yield of previous year and then place an order. They then come to the orchards from Feb onwards to ship it to wherever, some even staying on till April.

Interestingly, if one follows the traders, you can track the mango season. After Kerala in Feb and March, they go to Tamil Nadu and Maharashtra in April; May is in Vijayawada, Guntur and Warangal in Andhra Pradesh; June in Bihar and lastly July is in Uttar Pradesh when dusseri, langra and chausa will be ready.



### Where are the teachers? :



While we all know that we have a massive shortage of teachers in schools and even colleges, it was quite shocking to learn that the premier institute of India, IIT too is facing a crunch.

All the 23 IIT's together today have a faculty shortage of 34%. This is not just in the newer institutes, but in older ones such as Mumbai, Kharagpur and Kanpur where the shortage is between 25% and 45%. The only IIT where there is a surplus is IIT-Mandi in Himachal Pradesh.

IIT-Bhilai, in Chhattisgarh is in the worst spot with 58% vacancies. Kharagpur has 46% vacancies, followed by 36% in Kanpur, 29% in Delhi, 28% in Chennai and 27% in Mumbai – and alarmingly, these five are the top rated IITs.

What this once again shows is that merely putting an institute is not enough; it is in fact the easiest part. Getting faculty in these far flung backward areas to stay is the biggest challenge.

Early this year, a public appeal was given to M Tech and PhD students from IIT and NIT to work in the backward areas and serve the nation. There was an overwhelming response to the call and more than 5,000 highly-qualified persons applied. 1215 graduates were selected to teach in 53 of these top notch colleges in backward areas.

The ministry will pay the newly hired faculty Rs 70,000 per month in an initiative that is estimated to cost the government Rs 375 crore over the next three years.

This is most certainly the best way forward and the only way to overcome this shortage of teachers. Hope this experiment works and we are able to build a much better future for our nation. Afterall, it is graduates from the same institute who can probably make these ace students employable graduates.

### Recreating a piece of history :



Have you heard of a town which goes by the name of Muziris in Kerala? Maybe if you live in the state you might have but unlikely that most of city born and bred might have even come across this name.

Well, this town, now known as Muraccippattanam is historic and seeped in heritage as this was the most sought after trade center of the world known for its glamour and magnificence as ships and huge vessels across the earth docked in Muziris for spices, gems, silk, ivory and pottery. There is ancient literature, the Sangam Literature, which mentions Muziris and states that some 31 countries across Asia, Europe and Africa were engaged in trade with this town and nearby regions, sometime in the first century BC or even further beyond.

In a bid to recreate history and bring back Muziris into relevance, ambassadors of 31 countries will be coming down to Kochi in June for a expedition hosted by UNESCO in collaboration with the Dutch embassy. These delegates will visit the coastal towns once frequented by their forefathers and attend meetings from June 14<sup>th</sup> to 16<sup>th</sup>.

# The Real Green Carbon Black

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## RMWA Activities & News

### \* Setting of Vocational Rubber Training Institute for Training of recruits & Reskilling of personnel.\*



We are pleased to bring to kind attention of all our members on the productive support of members in providing the data of manpower requirement in our industry during our survey at IIRS we are successful in filing the application in Center for Entrepreneurship Development (CED) of Govt. of Gujarat, under scheme 2 for setting a training institute for training of recruits and reskilling of personnel.

During the past so many years we have recognized the dire need for trained machine operators for Rubber Machinery as no ITI / Polytechnic trains students for the same. Almost all rubber units hire uneducated / XII / Diploma pass students and train them at their works. This entails expenditure of money and time for the concerned unit, which otherwise could be used for business purposes, if trained personnel were available.

RMWA, in collaboration with Center for Entrepreneurship Development (CED) of Govt. of Gujarat, Team Lease Skills University (TLSU), Vadodara and Rubber Skill Development Council (RSDC) of Govt of India, propose to set up a vocational training center for training / reskilling in Rubber Machinery and Testing equipment.

[www.rmwa.in](http://www.rmwa.in)

Students of X, XII and Diploma holders would be trained in operation of Rubber Machinery and Testing equipment. Further, existing workers of rubber units would be reskilled / upgraded on the latest developments. The courses will be generally sourced from RSDC.

Trainees & their employers would also be eligible for reimbursement of training fees under various Central Government Schemes like Pradhan Mantri Kaushal Vikas Yojana (PMKVY) etc.

### \*Membership of Ahmedabad Management Association\*:



As you all are aware Ahmedabad Management Association(AMA) is well recognised institution providing very useful & popular programs on management and allied subjects, as also provision of very professionally managed spaces for conducting our programs. We have sought membership of the same to benefit RMWA and its members in the following ways :

\*RMWA members will avail discount in attending training programs organised by AMA wherever it is applicable in case if they register for the event through RMWA platform.

### \*Annual General Meeting\*:

Annual General Meeting for 2017-2018 has been tentatively scheduled on 3<sup>rd</sup> August, 2018. We invite enthusiastic and dynamic people to join the association as committee members to support in our various projects.

### \*Apologize\*:



We apologize for printing error in the subscription rates of our Journal in last edition.



### **\*Recruitment:\***



RMWA wants to recruit enthusiastic and skilled personnel for The RMWA Journal. The work profile includes getting advt. , contents and overall supervision of compiling and successful publication of the same.

### **\*Glimpses - RMWA : Support for IRE 2019\***

IRE 2019 Road Show at Hotel Radisson Blu on 26<sup>th</sup> May with the support of RMWA.



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# Press Release

## The Rubber Board

### **NR consumption increased by 6.4 per cent**

**- Dr. M.K. Shanmuga Sundaram**

Kottayam

16 May 2018

Natural rubber (NR) consumption in India increased by 6.4 per cent during the last fiscal (2017-18), said Dr. M.K. Shanmuga Sundaram IAS, Chairman and Executive Director, Rubber Board. He was delivering the presidential address in the 176<sup>th</sup> meeting of the Rubber Board held at Ernakulam. Consumption of NR increased from 1044,075 tonnes in 2016-17 to 1110,660 tonnes in 2017-18. According to provisional estimates, NR production in 2017-18 was 694,000 tonnes, with a 0.4% increase over the previous fiscal. Production of NR had increased by 23% in 2016-17 reaching 691,000 tonnes. Accordingly, NR production was initially projected in 2017-18 at 800,000 tonnes. However, production of NR during April-December was below expected levels and recorded an increase of only 4.4% as compared to the corresponding period in the previous year. NR production during January-March 2018 was 10% lower mainly on account of intermittent rains and relatively low rubber prices. However, NR production in 2018-19 is projected at 730,000 tonnes with a growth of 5.2%. The projected NR production is considerably lower as compared to the production potential, considering the prevailing low rubber prices and extent of untapped area, said the Chairman. Consumption of NR in 2018-19 is projected at 1.2 million tonnes, with an increase of 8 per cent.

Import of NR had been consistently increasing from 2008-09 to 2017-18 with an exception during 2016-

17. Import of NR touched all time high of 469,433 tonnes in 2017-18, an increase by 10.1% as compared to 2016-17 and around 70% was through duty paid channel. Import of NR was unusually higher due to favourable price situation, increase in consumption and less than expected production.

Import of NR is projected at 450,000 tonnes in 2018-19. Import of NR is projected to be lower than the gap between production and consumption in 2018-19 because of the relatively high closing stock of 2017-18. The export during 2017 -18 was 5069 tonnes. The stock at the end of the last fiscal is provisionally estimated as 292,000 tonnes, he informed the Board.

According to the report from Association of Natural Rubber Producing Countries (ANRPC) NR production during 2017 was 13.34 million tonnes and NR consumption is estimated to be 13.04 million tonnes. Global supply of NR in 2018 is anticipated to be 14.30 million tonnes while demand is anticipated at 13.50 million tonnes. As per the report from International Rubber Study Group (IRSG) world production of NR increased by 7.5% and consumption increased by 4.0% during 2017 with a surplus of 290,000 tonnes. Production and consumption of NR in 2018 are projected at 13.46 and 13.34 million tonnes respectively with a surplus of 120,000 tonnes. According to IRSG, synthetic rubber (SR) production and consumption had increased by 1.5% and 2.1% respectively during 2017, added Chairman.

The Ministry of Commerce & Industry, Government of India constituted a Task Force on Rubber Sector (TFRS) with Chief Secretaries of Kerala and Tripura as Chairman and Co-chairman. Other members of the Task Force are Joint Secretary (Plantations) and Director (Plantations) in the Department of

Commerce, Joint Secretary in the Department of Industrial Policy and Promotion (DIPP) and one official each from the state governments of Tripura and Kerala. Dr. A.K. Krishnakumar, retired Executive Director of IL&FS, Delhi (former Rubber Production Commissioner, Rubber Board) was inducted into the Task Force as a technical expert. The main mandate of the TFRS is to recommend short term solutions and long term strategies for mitigating the problems faced by rubber growers and suggest a policy on rubber taking into consideration the relevant provisions of the WTO Agreement and other trade commitments, general economic policy of Government of India, relevant Acts and Rules thereof and welfare of stakeholders involved comprising growers, processors, end product manufacturers, traders, workers and final consumers of rubber products, Chairman informed the Board. The Chairman also informed the Board about the Amendments in Rubber Rules

1955, consequent to subsuming of cess on rubber under GST.

The Phase 2 of Recognition of Prior Learning (RPL) project under PMKVY was successfully implemented in five states covering Kerala, Tamil Nadu, Karnataka, Tripura and Assam. Under the project, 22,040 candidates were successfully trained in four Job Roles. Rubber Board was one of the first public institutions in the country to submit and implement projects under PMKVY and the Board was adjudged as Champion Project Implementing Agency (PIA) under the PMKVY under government category by the Ministry of Skill Development and Entrepreneurship (MSDE). Further, Rubber Skill Development Council (RSDC) selected the Rubber Board as its best training partner, Chairman informed the meeting.

**Dy. Director**  
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## RSDC News

Rubber Skill Training in Full Swing in the Marginalized Section of the Country



### **Classroom session of Tyre Fitter training in Ernakulum under the NBCFDC scheme.**

Continuing with its drive to extend the benefits of skilling to the marginalized strata of society, Rubber Skill Development Council has tied up with the National Scheduled Castes Finance and Development Corporation (NSFDC).

NSFDC, under the aegis of Ministry of Social Justice & Empowerment has been set up with the objective to promote socio-economic development of Scheduled Castes living below the poverty line by providing financial assistance through income generating schemes and by developing their skills.

Under the terms of the MoU, RSDC will implement National Skill Qualification Framework (NSQF) aligned Skill Development Training Programmes sponsored by NSFDC. RSDC will ensure that candidates who are not already employed in the sector are the actual beneficiary of skilling programme under this MoU.

RSDC was awarded 1260 numbers for the fresh training in the rubber sector. The trainings are being conducted across the country. RSDC Affiliated Training Partners have enthusiastically stepped up to be a part of this project.

Trainings in the Job roles of Junior Rubber Technician and Mill Operator trainings has concluded in Jalandhar. The students have been offered placements in various rubber industries scattered across Jalandhar.

Training for Mill Operator and Compression Moulding Operator job roles are undergoing in Telengana, Andhra Pradesh, Uttar Pradesh, Haryana, Bihar, West Bengal and Punjab. The industry is urged to step up and hire these skilled candidates and give them a chance for a better life and a bright future.

RSDC - HSIIDC join hands for skilling in Rubber



### **Classroom session of employees at Rigid Polymers**

Haryana State Industrial and Infrastructure Development Corporation Ltd (HSIIDC) and RSDC have entered into an understanding for Skill Development Initiatives in the fast emerging industrial state of the country. HSIIDC is the nodal agency for the development of industrial infrastructure in the State of Haryana. HSIIDC is also mandated to provide skill development trainings to the people in the areas around the industrial estates.

Under the MoU, RSDC will assist HSIIDC in providing skill training for approximately 10000 candidates in the 1st year itself across various job roles. The understanding also enjoins development of the rubber sector in the identified 139 villages in Haryana through skill training programmes.

HSIIDC will align its training programmes with QP-NOS developed by RSDC as per the National Skill Qualification Framework (NSQF). The job roles for which training will be provided include Junior Rubber Technician, Tyre Fitter, Tyre Retreading, Material Handling & Storage operator, Injection Moulding Operator, Mill Operator and Compression Moulding Operator.



No.	Name and Address	Contact Details	Products
AAM-70	Gurukrupa Mould Make 7/10 Dashrath Estate, Nr.Shakariba Party Plot CTM, Amraiwadi Ahmedabad – 380 026	Manoj Kumar Chauhan <a href="mailto:Mkchauhan809@gmail.com">Mkchauhan809@gmail.com</a> 9727886478	Die Maker
LM-258	Jay Polytech Industries 78/79 Krishna Estate, Opp.Sabar Engg. B/h. New Nirma, Phase 4, GIDC, Vatva, Ahmedabad - 382445	Nisarg Shukla 7383833709 Njshukla2@gmail.com	Rubber Lining/Rubber Molded Article
LAM-69	Elastopoint Industries 1389, Fulpura, Bardolpura Chowk, Opp.Zonal Office, Madhupura, Ahmedabad 380004	Ronak Prajapati 9825717113 elastopoint@gmail.com	Deals in Plastic, Rubber, Chemicals
AAM-71	N.K.Rubber Industries E-38 Welcome Industrial Complex, Sanjay Colony, Sector – 23, Faridabad, Haryana – 121 005	Aditya Banthia 9811631530 banthia@nkrubber.com	Deals in O Rings, Quad Rings, U & V Seals, Seals & Packings, Automotive Rubber Parts, Custom Moulded Rubber Parts
LM-259	Yug Rubber & Plastics New Thorala, Ram Nagar Society, Marg No.2, Nr. Sunrise Enterprise B/H. Jaynath Petrol Pump Bhavnagar Road, Rajkot – 360 003	Rajeshbhai Patel 9510207070 yugrubberplastic@gmail.com	PU Rubber Seal, Hydraulic Seal, Savran, Rubber Derivatives
LM-260	Uma Engineers 5, Parth Estate, Jamfalwadi Canal Road, cTM Char Rasta, Abad-382449	Harshad Patel 9825550557 <a href="mailto:umarubber@gmail.com">umarubber@gmail.com</a>	Moulded Rubber Parts
LM-261	SHAH Elastomers 149, Mirpura Road P.O.Bhattanagar,	Kirit Shah 9830083900 Jacky shah 9836483900	Supplier of Indian, Kutch, Metro, Railways/RVNL/IRC



# Tenders

<b>1. Transport Department</b> Supply of hardware and general items -battery cable (positive) 440/0.45 mm, battery cable (negative) 440/0.45 mm, I.t. Wire 5 mm, 32/0.21mm (, 25 mtr. Roll), I.t. Wire 6 mm, 30/0.26mm (25 mtr. Roll), I.t. Wire 8 mm, 56/0.31mm (25 mtr. Roll), fan belt for air compressor a-1862, a-72, hose pipe(heavy duty with nylon thread 8, mm dia), hss twist drill bit 19mm, syn. Enamel paint p.o. Red, aluminum paint. TID : 29777208   <a href="#">Like</a>	<b>Port Blair / Andaman And Nicobar</b>  <b>Value : INR 500,000.00</b>	<b>Due on</b> 11-6-2018
<b>2. Indian Oil Corporation Limited</b> <a href="#">Supply Of Gasket, Sheets And Gland Packing</a> TID : 29780033   <a href="#">Like</a>	<b>Bongaigaon / Assam</b>  Refer Document	<b>Due on</b> 14-6-2018
<b>3. Indian Institute Of Technology</b> <a href="#">Supply Of Rubber Speed Bumps .</a> TID : 29783509   <a href="#">Like</a>	<b>Patna / Bihar</b>  Refer Document	<b>Due on</b> 13-6-2018
<b>4. Eastern Railway</b> <a href="#">Supply Of Centre Pivot Rubber Bush For Wdg3a As Per Dlw,S Drg.No.Tpl 5111 „Alt 'K'.</a> TID : 29790544   <a href="#">Like</a>	<b>Not Classified / Bihar</b>  Refer Document	<b>Due on</b> 3-7-2018
<b>5. Urban Administration And Development</b> <a href="#">Supply Of Various sizes of tire-tubes and flap</a> TID : 29793279   <a href="#">Like</a>	<b>Bhilai / Chhattisgarh</b>  <b>Value : INR 1,000,000.00</b>	<b>Due on</b> 21-6-2018
<b>6. Engineers India Limited</b> <a href="#">Supply of Hose Pipes And Hose Couplings.</a> TID : 29778451   <a href="#">Like</a>	<b>New Delhi / Delhi</b>  Refer Document	<b>Due on</b> 28-6-2018
<b>7. Central Coalfields Limited</b> <a href="#">End Fittings for Crimping in different size of High Pressure Hydraulic Hose as per ISO 12151</a> TID : 29791935   <a href="#">Like</a>	<b>Ramgarh / Jharkhand</b>  <b>Value : INR 248,220.00</b>	<b>Due on</b> 28-6-2018
<b>8. Kerala Minerals And Metals Limited</b> <a href="#">Supply Of Synthetic Rutile.</a> TID : 29776107   <a href="#">Like</a>	<b>Chavara / Kerala</b>  <b>Value : INR 138,216,500.00</b>	<b>Due on</b> 30-6-2018
<b>9. Indian Space Research Organisation</b> <a href="#">Supply of Nitril Rubber (Rocasin Rubber) Work Contract On Insulation Lining Activity.</a> TID : 29782584   <a href="#">Like</a>	<b>Trivandrum / Kerala</b>  Refer Document	<b>Due on</b> 25-6-2018
<b>10. Hutti Gold Mines Company Limited (the)</b> <a href="#">Supply of surface &amp; UG diamond drilling accessories.</a> <a href="#">supply of spares for GHH LPDT.</a> <a href="#">Job work contract for collection, transport and unloading of garbage from various colonies to garbage yard with 01 tractor and 08 labourers.</a> <a href="#">Hi_REL UPS comprehensive, supply erection, including civil works, testing &amp; commissioning of dust extraction unit on turnkey basis in metallurgic plant.</a> <a href="#">design,engineering, manufacture, supply, erection, including civil works, testing &amp; commissioning of dust extraction unit on turnkey basis in metallurgic plant.</a> <a href="#">supply of soda ash (light).</a> <a href="#">braided hose pipes for different sizes for underground loaders and drilling machines.</a> <a href="#">spares for UG crushers.</a> TID : 29781082   <a href="#">Like</a>	<b>Raichur / Karnataka</b>  <b>Value : INR 1,178,000.00</b>	<b>Due on</b> 30-6-2018



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