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ROTOTALK

Quarterly Newsletter of Society of Asian Rotomoulders

Editorial Comment

The exuberance of youth brought forth a new kind of enthusiasm for a StAR event. With excitement writ large on their faces the students of BITS Pilani Goa lapped up all the knowledge on basic rotomoulding and the touch & feel exposure to a variety of attractive rotomoulded products. All this at the Rotational moulding Orientation & Awareness seminar on 23rd March '19 at BITS Goa campus. Staying in activity mode, the StAR Webinar on 27th March engaged a good size audience of StAR members in the enlightening presentation and interactive discussions which comprised the webinar on Using Oven Efficiently conducted by Divya Raithatha the dynamic young StAR Board member and Director of Vinodrai Engineers..... in a busy and educative start to 2019 StAR activities.

Dear Reader

Emphasis at StAR has always been to keep the membership and industry involved and interested in a continuous stream of engagements which prove useful and ensure that they are looked forward to. These are planned and rolled out in a manner so as to allow intending participants to mark their own individual calendars with the convenience of time and pace.

In an interesting line up of events apart from monthly webinars which StAR is offering in its current calendar up to StAR annual conference at Goa in January 2020, there are Regional Meets cum Seminars at Ahmedabad and Delhi in end May and August / September respectively. A StAR Group will get put together to attend ARMO 2019 Conference at Sun City, South Africa from 16 to 18 September. RMCER will remain a source of attention and attraction as it builds up to realize its many goals and objectives to serve the Indian rotomoulding industry. All these are reason enough for StAR members to be at their participative best and the present non members to join membership before they miss out on anything.

S B Zaman
StAR Executive Director

U Savadekar
StAR President

GREAT ENTHUSIASM AT BITS GOA FOR StAR ROTOMOULDING ORIENTATION SEMINAR

Registration

More than 80 students plus

BITS Director along with his colleagues who are on RMCER Operating Committee in a meeting with StAR prior to the seminar expressed his keenness for joint activities to start in whatever feasible manner. According to him these will only strengthen RMCER when the entity gets formally operational. There are ways for StAR members to get involved right away by sponsoring PHD students to work on projects which they would like to be taken up for research. A StAR member present at the meeting informed that a couple of his customers had shown interest in getting project work done after they learnt about the setting up of RMCER from him.

Director BITS commended StAR for taking the very necessary step of educating BITS students and faculty about the process of rotomoulding from a practical industry viewpoint. With a very good turnout of eager students, mostly from Mechanical engineering, PG and PHD queueing up at the registration desk surrounded by rotomoulded products on display and colourful product posters, it was great atmosphere before commencement of the Rotomoulding Orientation & Awareness seminar by StAR. The Seminar started at 2 pm on 23rd March 2019 with eighty students and some faculty members apart from the StAR visiting team in attendance.

Setting the mood at the commencement of the seminar was a brief invocation by a student attendee followed by Dr Sachin Waigaonkar greeting all the attendees present, on behalf of BITS.

RMCER Convenor and StAR Past President Ashish Baheti then took over to talk about StAR, RMCER while introducing the members of the StAR team present. He explained the logic and purpose of the afternoon programme, welcoming the students in particular to imbibe, ask questions and learn as much as possible from the presentations on the programme.

The first StAR speaker Swetang Dave of Consta Cool who presented on "What is Rotational moulding – Products, Applications & Markets" ran through an array of interesting

Ashish Baheti

Swetang Dave

Umakant Savadekar

Ravi Kadivar

Touch & feel of rotomoulded products

rotomoulded products before explaining the basic process with the USP of the products being stress free. He underscored the essential simplicity and versatility of the process.

The next logical presentation to follow was the evolution of the process and of the rotomoulding industry in India. StAR President Umakant Savadekar of Phychem Technologies presented on "The journey so far...." bringing out the important milestones as the process went through its adoptive phase in India before consolidating into the industry it is today.The break for tea gave the attendees opportunity to browse, touch, feel and ask questions about the rotomoulded products on display. When they returned to the meeting there was even greater excitement in store for them. This was the Roto entrepreneurship section of the seminar. It was inspiring for them to listen to first person accounts of three very successful business owners of the Indian rotomoulding industry – Ravi Kadivar of Greenage industries, Ashish Baheti of Vectus Industries and Blaise Costabir of GMI Zarhak.

When it was time for Q & A the speakers were quick to acknowledge that some of the questions asked by the youngsters were quite searching indeed. Pre existing knowledge about the process was at a surprisingly good level and the student attendees who were mostly from the mechanical engineering department had proved to be quick learners.

StAR supplier member Greenage Industries who provided sponsorship support to the seminar received special thanks for being encouraging in a special cause.

StAR WEBINARS ARE GAINING CURRENCY

Recently StAR introduced webinars as a new learning medium and special membership benefit for StAR Members. This has received very good and encouraging response from the membership. On 27 th March'19 the third StAR webinar on Topic: "How to use oven efficiently" was presented by Divya Raithatha, Director of Vinodrai Engg. and a very active StAR Board Member. The hour long online session included 25 minutes presentation followed by a very interactive Question & Answer Session. It was attended by 27 personnel from 16 StAR companies which included:

BAPL Rototech	BD Industries	Evolve Polymers
GAIL	GMI	Greenage Industries
Kaveri Plasto Containers	M Plast	Phychem Technologies
Roots Multiclean	Seaplast (Promens)	Sintex BAPL
SMR Pliable	SS Polyfusion	Vectus Industries
Vinodrai Engg.		

ASPECTS COVERED

- Steps for maintenance of gas & diesel burner
- Key points of maintenance of blower
- Considerations for location of oven
- Use air flow rate intelligently
- Use correct size of burner
- Checking the thermocouples
- Proper oven selection
- Cool slowly
- Clean regularly
- Use the right powder

WHAT IS WEBINAR?

Seminar / Training or other presentation that takes place online, allowing participants at different locations to see and hear the presenter, ask questions, and provide feedback.

BENEFITS OF WEBINAR

- Contemporary topics
- No need to travel long distances to attend sessions.
- Training modules
- Documents, Videos & presentations are shown online
- Interact with best experts of the industry
- Trouble shooting

WHAT IS REQUIRED TO ATTEND A StAR WEBINAR?

- A computer or laptop with headphone or speaker system
- Internet connection having at least 1 mpbs speed
- Link to join webinar - shared by StAR

Participants can even join webinars through using their mobile phones.

Very positive feedback received from the participants has encouraged StAR to organize such webinars on continuous basis. Soon members will receive the dates of next webinar which will once again provide an opportunity to learn new things...

ROTO & BLOW MOULDING - COMPARATIVE ANALYSIS

Rotational Moulding, also called rotomoulding or rotocast, is a thermoplastic process for producing hollow parts by placing powder or liquid resin into a hollow mould and then rotating that tool bi-axially in an oven until the resin melts and coats the inside of the mould cavity.

Roto: Process Features

Rotomoulding, when properly used, can create several parts which are manufactured as one piece and also makes moulded threads and mould-in inserts possible. Rotomoulding also allows provision for thickness control and complex mould split lines.

Economically speaking, the capital expenditure required for Rotomoulding machines is lower than Blow moulding machines. Tooling is also relatively cheaper and simpler. Rotomoulding is economically feasible for both low-volume and high-volume production runs and produces negligible waste.

Because heat is used for moulding, no pressure is involved in this process, which makes it safe for labour. However, for the same reason, rotomoulding has longer cycle times and high energy consumption. Also, it requires skilled labour and training.

Roto: Product Features

Rotomoulding is an extremely versatile process which makes a wide range of surface finishes - textured, smooth, or polished - possible. The products manufactured through rotomoulding are entirely stress free because they are moulded under low pressure. As mentioned earlier, rotomoulding allows for production of sturdy, complex, intricate parts with variable thickness.

Blow moulding is the process of pressure-inflating a hot, hollow, thermoplastic preform or "parison" inside a closed mould so its shape conforms to that of the mould cavity.

Blow: Process Features

In comparison to rotomoulding, blow moulding offers significantly lower cycle times and maintenance. Because the capital expenditure for a blow moulding machine could be approximately 6 to 7 times that of a rotomoulding machine of a comparable size, the minimum number of parts per year that would justify the process would be 30,000 parts and up. At higher volumes, to match the same production out of a single blow mould, a rotomoulder would require 8 to 15 moulds.

However, blow moulding leads to a lot of scrap generation due to "pinching" of the parison that might not always be recyclable.

Blow: Product Features

Due to the fact that pressure is used to develop the products, blow produced products might have 'stress points' - that is, parts of the product which are especially liable to break under physical pressure. Additionally, for the same reason, non-uniform thickness control is not possible in blow moulding. Unlike rotomoulding, blow moulding cannot offer the facility to produce several parts together.

To conclude, while blow moulding has its advantages in terms of cycle time and less amount of tooling and maintenance required, rotomoulding is still the preferred method for moulders that produce intricate and complex plastic products.

By Misha Baheti
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PERMANENT BAR CODE GRAPHICS - THE FACE OF TOMORROW

The proverb 'Necessity is the mother of invention', is a thing of the past. Innovation and novelty is the new way of life. With ever increasing data and massive records to manage, one looks to technology for aid and as expected, we are not disappointed.

A visual, machine readable representation of data is available in the form of bar codes/ QR codes.

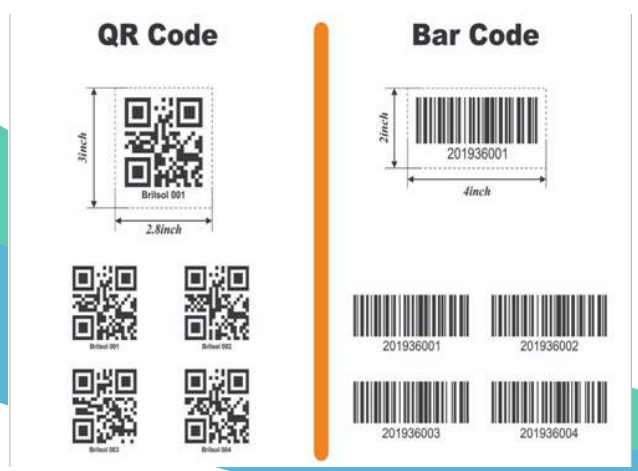
From identification to traceability and recording, barcodes have become a ubiquitous element of modern civilisation. There is practically no area untouched by technology and bar codes have carved a niche for themselves in almost every sphere of development and the rotomoulding segment is no exception.

Hitherto, bar codes have been used in injection moulding, owing to the indoor use of products that makes the bar codes with vinyl stickers last long thus allowing easy traceability in articles.

However the scenario changes with rotational moulded articles. Since they find use outdoors, the vinyl stickers tend to wear off with time and traceability becomes a challenge.

Brilsol in its continuous pursuit of excellence and innovation has explored new avenues and come up with its 'Unique Bar codes/ QR codes' that stand the test of time and make traceability of articles possible even after years of use.

One reason why manufacturers face rejection is when companies change their supply chain vendors which ends up changing the raw materials as well. It is not hard to understand that with the change in raw material, the properties of the final product also change and the problem area never gets detected. With BRILSOL's bar codes/QR codes', there is no need of a new set up, all you need is a scanner to scan



the bar code and connect the scanner to your computer excel sheet. Thereafter it will automatically feed the unique bar code number in your excel sheet after which you can fill the data as per your requirement.

In case of any replacement after 2 or 3 years, a product can be checked for its raw materials, additives, as well as the manufacturing machine, by scanning the bar code in the excel sheet with the help of the scanner in order to identify and rectify the area of concern.

The above mentioned procedure is a manual process. You may however work on google sheets for online access. Thus, industrial units will face no hassle in tracing any issue and it is needless to say this will save time and labour. BRILSOL's 'Unique bar codes/QR codes' are an edge above the rest in terms of utility, durability and endurance. This is an innovation par excellence and is bound to take bar codes/ QR codes to a new high.

By Rajeev Sharma, Brilsol
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UMAKANT's TECHNICAL CORNER

USING COLOUR IN ROTATIONAL MOULDING

Old days of black coloured tanks and pipes are gone. Now we are in the colourful world of Rotational moulding products. It might be water tank, road barrier or dustbin, everybody likes bright, shiny colors. Colour is not about only aesthetics, its about Expression ...

Colouring is a somewhat more critical aspect in rotational moulding products as process involves long heating cycles. Also since rotational moulding products are generally for outdoor purpose they are expected to perform for longer life cycles in very tough outdoor weathering conditions of UV, humidity and chemical environment. That's why masterbatch formulation developed for injection moulded products, may not be suitable for Rotational moulding applications.To understand this further we will have to look for some of the types and properties of basic pigments. Moulder can think why should I understand this? While it may not be necessary to understand in detail it is necessary to be conversant with the basics. Nowadays this is very important from the perspective of colour fading, and so important to follow stringent rules and regulations on use of different metals, chemicals in final product.

There are mainly two types of pigments:

Organic pigments: These pigments are generally derived from plants made up of carbon chains and carbon rings.

Inorganic pigments: Compounds obtained from inorganic metallic compounds and salts such as chromates, metallic oxides, sulphates etc. are used in inorganic pigments.

Based on the properties, the following characteristics make organic pigments different from inorganic pigments:

- Particle Size

Organic pigments have smaller particle size compared to inorganic pigment colours.

- Brightness

Organic pigments are brighter compared to inorganic pigments. But for long-lasting products, inorganic pigments are preferred because fading and exposure to sunlight or chemicals can take away the bright colour of organic pigments.

- Colours

The variety of colours available in inorganic pigments is greater than the variety available in organic pigment colours. Titanium dioxide; Iron oxide, etc. are examples of inorganic pigments. Lake colours are examples of organic pigments.

- Cost

Inorganic pigment colours are more economical and cost-effective than organic colorants.

- Dispersion

Compared to organic pigments, inorganic pigments are easier to disperse and therefore used for various applications.

There is a lot to learn about this subject, we will continue in next Rototalk issue....

NEW AVENUES OF ROTO-MOULDING APPLICATIONS IN SWM - CONVERTING WASTE INTO GOLD

BRIEF HIGHLIGHT ABOUT THE INNOVATION:

➢ Composting is the natural breakdown of organic matter to produce a crumbly nutrient-rich soil. The resulting compost can be added to other soil types as a fertilizer, forming an excellent growing medium for plants. By managing this natural process in your own garden, you can dispose of waste, and produce an agent that will improve the look and yield of any plant and flower. Regardless of the size of your outdoor space, there will be a composting solution to suit your needs.

➢ The compost bin is a one stop solution for all your kitchen waste, green waste, food waste, veg, non-veg, dairy products, citrus fruits, bread or cake, and so on. Eco Bin recycles all this waste into a nutrient rich organic compost, which also acts as a "soil conditioner"

Basic idea for the product:

MAHARASHTRA MAHA POLYPLAST has developed a unique product which converts wet waste into "gold". The product is developed by Rotomoulding technology. The compost bin is one piece stress free product. Having provision for aeration to create aerobic atmosphere in the chamber.

Design development of the product:

The product is designed by latest CAD-CAM software and the complete product is designed with FEA analysis before launching to understand the application for ruff & tuff application for technology and the development of the mould for the same is done using hi-tech CNC machines.

Product details:

The compost bin comes with a powder coated stand with all accessories and fittings. The compost bin is made with special grade of UV Stabilized polyethylene suitable for outdoor applications. The compost bins are fitted with bushing and can be easily rotated by one person. No power is required.

WIDE RANGE OF COMPOST BINS DEVELOPED

➢ Wide range of compost bins developed by Hi-Tech CNC Machined Molds

➢ The Range starts from 60 Ltrs processing 5 kgs / day to 1000 Ltrs processing 500 kgs /day

ORCO BIN is an organic waste converter which helps convert you're segregated organic waste to good quality compost.

TIME FOR WASTE TO DECOMPOSE

When the waste is dumped, it does not decompose very quickly and make way for the other waste. The nature of waste being dumped and the time it takes to decompose, pose a serious threat to the environment as well as human health. Given below are some examples to understand how much time it takes for various materials to decompose:

USES OF COMPOST :

➲ Out of 100% of wet waste the compost one gets is about 20% only, that is if in a month we put 100kg of waste we will get 20 kgs of good compost.

➲ This compost is very good manure, rich with nutrients for your kitchen and society gardens.

Vegetables, Fruit Skins, Waste Food	3 - 4 Weeks
Paper Bags	1 Months
Cloth Bags	5 Months
Wood Pieces	10 - 15 Years
Leather Shoes and Sandals	40 - 50 Years
Iron sheets	50 - 100 Years
Aluminium Sheets	200 - 250 Years
Plastics Bags	1 Million Years

➲ One can use this compost in the Society garden and improve the plant life, soil off the garden and get a far better fauna overall.

➲ Additionally, one can use it for Terrace and Kitchen gardening at individual's house.

➲ Additional compost can be sold in the market for Rs. 5 to 8 per kg approximately.

Mahatec Orgi Automatic Compost Bin installed at BITS Pilani Goa Developed By Maha Technoplast Pvt. Ltd.

➲ ORGI Motorized Compost Bin was recently installed at BITS Pilani Goa developed by Maha Technoplast Pvt. Ltd.

➲ The Compost Bin has both auto and manual mode which helps in rotating the bin and moving the waste upside down. It comes with a timer mode which helps the compost bin to periodically move in reverse & forward direction.

➲ The basic principal is to put wet waste in first bin for 15 days. Rotate it 4 times a day. After 15 days start pouring the waste in the second bin.

➲ After 30 days the wet waste gets converted into compost.

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FORTHCOMING EVENTS

CALENDAR OF ROTOMOULDING & RELEVANT EVENTS

DATE	VENUE	EVENT
May End		StAR May Webinar
May 18, 2019	Ahmedabad	StAR Regional Meet
May 16 - 17, 2019	Mantova at Villa Favorita	IT-RO Conference
May 21 - 24, 2019	Guangzhou, China	RPC-CPPIA Conference
June 6 - 7, 2019	Gdynia, Poland	V Konferencja Rotopol Conference 2019
June 23 – 25, 2019	Brisbane	Rotomould 2019
Aug - Sep	Delhi	StAR Regional Meet
Sep 6 – 18, 2019		ARMA/ Roto Connect Rototour
Sep 16 – 18, 2019	Sun City, Johannesburg, South Africa	ARMO International Conference hosted by ARM
Oct 16 – 23, 2019	Germany	K – Show
Oct 27 – 30, 2019	Houston, USA	ARM Annual Conference

Rototalk is the newsletter of Society of Asian Rotomoulders(StAR) for internal circulations only. Editorial Contributions can be sent to S.B. Zaman, Executive Director, StAR, Email: sbzamanp@gmail.com

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