The Rotomoulding Process
A Revolutionary Approach to Rotomoulding

EVOLVE

TAO

COVER IMAGE SUPPLIED BY matrixx polymers
Starting from October 2016 I will become the ARMO Chairman. I would like to thank Oliver for all the work he has put into ARMO over the last two years and look forward to working with him and his team as they organise the next ARMO European Conference in Hamburg September 2018.

For those that do not know me I have been involved in Rotational Moulding since 1985. Having worked for several companies I started Rototek Ltd in the UK in 1993. At the end of 2014 I left to start UniqueRoto a specialist consultancy in rotational moulding.

The aim of ARMO is to encourage and promote the rotational moulding industry worldwide. During my term I hope that I will be able to further these aims by encouraging moulders and associations to play an active role in ARMO. I am also hoping we can initiate some positive projects to promote the rotomoulding industry to potential customers, to sustain and encourage growth in Rotational moulding worldwide.

I look forward to meeting as many of you as possible during my term as chairman. Please feel free to contact me if you have any ideas or comments on how ARMO can better achieve its aims.

MARTIN SPENCER

This is my last message as ARMO Chairman – my two year term that has started in October 2014 at the Rotoplas show will soon end. It has been an exciting and inspiring but also demanding time. It started off with the unexpected task of quickly finding a new partner for relaunch of a new ARMO website and corresponding ARMO newsletter magazine – I’m very grateful that ARMA could fill this role and that the switch over went so smoothly and professionally.

During my terms I had the pleasure to visit many of the affiliates meetings and was also involved in organizing the ARMO meeting in Nottingham. I also mediated the decision to work together with the new, active and lively Italian organization IT-RO, brought forward a few policies and guidelines, initiated to translate the magazine in Chinese, established a subcommittee to work on PR materials to promote the rotomoulding process and more. All of that while maintaining a healthy growing budget for ARMO.

Throughout I received great secretarial support by Paul Baxter of BPF. My sincere thanks also to all of the ARMO board and especially to my Executive Team consisting of Bill Spenceley, Martin Spencer, Ravi Mehra and Wayne Wiid for their great support in the last two years.

We are all very happy to see Martin Spencer taking over the chairmanship of ARMO, starting from October.

OLIVER WANDRES

Chair’s Message
Since Matrix was founded 24 years ago we have grown organically and by acquisition to become one of the leading global suppliers of raw materials to the rotomoulding industry. We are committed to innovation and to helping customers make the most of opportunities.

Technical Expertise is in our DNA

Since Matrix was founded 24 years ago we have grown organically and by acquisition to become one of the leading global suppliers of raw materials to the rotomoulding industry. We are committed to innovation and to helping customers make the most of opportunities.

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Sales: sales@matrixpolymers.com
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matrixpolymers.com
PUSHING THE BOUNDARY OF
THE ROTOMOULDING PROCESS

The big step-changes in the growth of rotomoulding will only happen if we develop new and better rotomoulding materials. Put simply, more choice in materials mean that more products can be produced using the rotomoulding process.

At Matrix when we develop new materials, rather than spending a lot of time and money creating things that no one wants, we prefer to look at specific problems that our customers have. It could be an existing product that isn’t performing well or a totally new application.

Venplast is an Italian company that specialises in manufacturing a wide range of industrial ventilators and extractor fans. Some of these ventilators are used in the petrochemical industry, in chemistry laboratories and in metal treatment processes. They are used to extract dangerous and corrosive fumes and gases. Their challenge was that they needed to produce the blower part for their ventilator system by rotomoulding. The operating environment for these products can be extremely harsh and they needed a material that was tough and stiff and that could also operate at higher temperatures than polyethylene could cope with. In addition the material had to handle varying pressures and some of the gases extracted can be explosive, so no spark could be generated by a build-up of static electricity. The customer specified that the material must comply with the Underwriters Laboratory Standard “UL 746 B” for “Relative Thermal Index”.

The Relative thermal index (RTI) is a relative measure of a polymer’s ability to retain its physical properties over a period of time at an elevated temperature. Revolve R-Tuff PP60 was exposed for more than 1000 hours (greater than 40 days) in a climatic chamber at a temperature of 110 °C. After this time an impact test was conducted to assess the performance of the material. An Izod was performed on notched samples in accordance to the ASTM D256. For the material to pass its value had to be greater than the 50% of the initial value of the impact.

To meet all these demands we developed as part of our “Designed for Roto” programme a new material called “R Tuff PP60”.

You can see that the material after 1,000 hours retained 63% of its original impact strength and easily passed the test.

Making polypropylene conductive also presented significant challenges. Although conductivity is well established in rotomoulded polyethylene it is less common in polypropylene. After extensive testing and experimentation carried out at the Matrix Technical Centre in the UK, Revolve R-Tuff PP 60 was developed with a surface resistivity of 2.5 * 10^5 Ω/sq, - which is enough to prevent any static sparks.

This illustration shows the level of surface resistivity required for an inert polymer such as polyethylene and polypropylene to be conductive in comparison with a metal (e.g. steel).

One of the general perceptions about polypropylene in rotational moulding is that it has inherently poor mouldability and poor impact strength with a very narrow operating window, this is not the case with “R Tuff PP60”.

The Rotomoulding Process
You can see from this picture that the new grade moulds out very easily and there is no pin-holing.

The ARM impact test based on a falling dart method was used to compare this with other materials. Test mouldings were made with a 5mm wall thickness and produced at the optimum moulding condition on our Ferry carousel RS1.90. The oven temperature was fixed at 250 °C. The rotomoulded products were cut and standard 125 x 125 mm were prepared & conditioned at -15 °C and plus 23°C for 24 hours before being impact tested.

The graph compares the impact performance of R-Tuff PP60 with a conventional rotomoulding polypropylene showing the material has 50% better performance than an impact modified polypropylene. Unusually, the material has some impact strength at minus 15 degrees, whereas the traditional grades are glass-brittle at temperatures below freezing.

One of the misconceptions regarding polypropylene that it has poor mouldability & impact strength. This can be true in some cases however there are several PP chemistries which could surprise even experienced moulders. Injection moulded products for automotive applications are dominated by PP as much as rotational moulded products are dominated by PE. So there are many PP grades which could be developed to suit our rotational moulded process.

Below we have reported temperature profiles recorded at our carousel Ferry machine in Matrix.

So by listening to our customer and by working with them in close co-operation on their specific product we have developed a new material that is now in commercial use and we have a happy customer!

We see that there are many opportunities for this new powder and polypropylene is very widely used in many other plastics processes and we see an immense number of applications for it in rotomoulding. We believe this industry needs more advanced and higher performance polymers so that it can continue to compete with other processes and grow. At Matrix we are doing everything we can to help rotomoulders embrace the future and we welcome you to contact us about any new difficult projects you have.
A Revolutionary Approach to Rotomoulding

EVOLVE

Even though rotomoulding continues to attract an increasing level of interest globally, it seems that it maintains its inherent challenges such as long cycle time, a limited selection of rotomouldable materials and an inefficient heat exchange, causing pinholes, voids, clogged breathing systems & failures. Seemingly the process’ resins such as polyethylene, polypropylene, polyamide etc have not been transformed by the introduction of advanced technologies that could help to address these specific issues.

As a material supplier, Matrix Polymers has conducted intensive research and studies in order to tackle some of the common issues that many rotomoulders still face today. In this article, we describe a new technology called Evolve - a technology that could help moulders avoid pinholes on their products’ surface, shorten cycle time and reduce gas consumption without sacrificing material performance and product quality.

The ideal condition is thought to be a small number of pinholes towards the inner, free surface although the optimum moulding conditions should be established by performing tests on the moulded part to verify whether the material (and the part) achieves the performance levels targeted.

Evolve by Matrix Polymers can speed up the coalescence of the powder in its molten phase by reducing the surface tension of the bubbles which are formed during the sintering phase, so less heat is required for them to disappear. Evolve is not a flow promoter and would not have any effect on the rheological (viscosity) properties of the resin. Other factors may influence the sintering stage of the process such as particle size and its distribution, particle shape and how the heat is transferred from the oven (burner) to the polymer.

Another way to assess how the technology influences the sintering stage of the rotomoulding process is to measure the development of the part-density. In simple terms, the principle states that the buoyancy force on an object will be equal to the weight of the fluid displaced by the object, or the density of the fluid multiplied by the submerged volume times the gravitational acceleration. At each of the moulding conditions, the density of a moulded part taken from the hexagonal bin was measured: the performance of N-307 with and without Evolve was measured as shown in figure 5.

As can be seen in figure 1, the technology influences the sintering process and the polymer achieves its nominal density sooner. For more information contact technical@matrixpolymers.com

Aldo Quarantino

Aldo is Technical Director for Matrix Polymers. He has a degree in Mechanical Engineering from Cassino University in Italy. After University Aldo moved to UK to work in the plastic industry and he joined Matrix in 2004. Aldo is responsible for all technical activities within Matrix Polymers.
Our Collection represents a travel journal where technicians and designers become sailors navigating in an open sea towards the unknown. The aim is to explore: the collaboration with Italian designers enable the laboratory to stretch boundaries, expand points of view, develop creativity. “Twentyfirst” represents a set of landing stages that have been discovered and marked on new artistic maps. The depth of this research also depends on the combination of materials, colours, shapes and images.

Inspired by the eternal, essential force that flows through all the matter of the Universe. Tao extends in two polarities of different sign, represented by two complementary forms that are joined into a single object. The union of the two shapes creates a whole similar to a flower with two petals ready to be caught.

www.21st-design.com

“Inspired by the eternal, essential force that flows through all the matter of the Universe.”
On November 24 and 25 will be the 2016 Master Class. We have titled it “Roto moulding 4.0” by analogy to the methodological and technical revolutions that will support tomorrow’s industry. Rotomoulding cannot be just content to the Viewer. Rotomolding cannot just stand on the sidelines.

Research of productivity and new markets are at the heart of our strategies, that’s why we have designed this program around materials and new production concepts, which will give you the opportunity to compare your vision with companies who are developing solutions that go beyond the experimental stage. You will be amazed...

**THURSDAY 24 NOVEMBER**

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<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>12:00</td>
<td>Welcome Buffet at TOTAL in FELUY</td>
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<tr>
<td>13:30</td>
<td>Opening address by Olivier Greiner (Site and R&amp;D Manager)</td>
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<tr>
<td>13:45</td>
<td>From a drop of oil to the production of polyolefins: the story of a multi-stage process</td>
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<tr>
<td>14:00</td>
<td>A refresher in ‘basic chemistry’.</td>
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<tr>
<td>15:00</td>
<td>Polyolefin manufacturing processes.</td>
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<tr>
<td>15:15</td>
<td>The function of ‘data sheets’: for which uses and for which purposes</td>
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<tr>
<td>16:00</td>
<td>Total Site Tour</td>
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<tr>
<td>17:30</td>
<td>Plastics and Geopolitic</td>
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<td>18:15</td>
<td>What Next? Polymers and Composites for the future</td>
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<tr>
<td>18:15</td>
<td>Participants travel to their hotel</td>
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<tr>
<td>20:00</td>
<td>Apéritif and dinner</td>
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**FRIDAY 25 NOVEMBER**

<table>
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<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>08:15</td>
<td>Participants meet in the hotel lobby and travel from LIEGE to BILZEN (AMS)</td>
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<tr>
<td>09:00</td>
<td>Coffee on arrival 09:15 – 10:45 Out of the box!</td>
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<tr>
<td>10:45</td>
<td>AMS presentation on the concept of moving ‘from the conventional machine... to a non-conventional, robotic and electrical heating machine’.</td>
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<tr>
<td>12:00</td>
<td>AMS presentation on the concept of moving ‘from the conventional machine... to a non-conventional, robotic and electrical heating machine’.</td>
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<tr>
<td>13:00</td>
<td>Travel to PLASTIG!</td>
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<tr>
<td>13:30</td>
<td>The practical example of PLASTIG: an entirely automated company</td>
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<tr>
<td>15:15</td>
<td>Travel to ANVERS or BRUSSELS</td>
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The 2016 event will be conducted in French and English.

Book these dates and sign up now for the future! For more information or to register please email a.delansalut@rotomoulage.org
Life always presents curious coincidences... We announced at the beginning of the year that one of our objectives this term was to have a Technical Director for ARM again.

We had a great one for years: Dr. Roy Crawford, working from Queen’s University at Belfast, served ARM as an extraordinary scientific Technical director.

When he moved to the opposite part of the world and took a lot of new responsibilities, he finished being our technical director, but ARM’s friendship with him never ended.

Roy was an erudite gentleman. I learned a lot from him, and I am pretty sure that all rotomolders around the world can say the same. He dedicated his life to research and sharing his knowledge, from Ireland to New Zealand. From ARM to RotoWorld. From his lab to the world. Our industry owes much of our development over the decades to him.

The rotomolding industry worldwide will never forget him.

Last month, already retired and enjoying his free time, Roy passed away. At the same time, ARM was coming to an agreement with our new Technical Director. It is like if our dear Professor left his baton to Dr. Nick Henwood.

So, as always in life, sad moments just come with good ones, and hope and excitement for the future make us rise and be optimistic. Having Dr. Nick Henwood as our new Technical Director will help ARM and the industry to take next steps, to go further, and to grow big.

Dr. Henwood has been involved with rotomolding since the mid-80s and served on the ARM Board of Directors. You can read more about his new role as our technical director at the ARM blog: https://blog.rotomolding.org/2016/08/22/arm-technical-director-nick-henwood-to-increase-technical-value-in-arm/

Farewell Roy! Welcome Nick! Thank you both for being part of this great Association.
Capturing Opportunities

If you’re interested in hearing specific and detailed case studies about exploring new horizons effectively across geographical boundaries and in various industries including, banking, Telecoms, manufacturing, rotational moulding and many more, this is itself an incredible opportunity to capture.

Understanding how connections and collaboration can make opportunities emerge from nowhere is a business skill every leader must have. I have countless examples. In the session I would have people actually doing this for themselves. This isn’t about listening to hours of talking! In this interactive workshop you will be putting this information and skills into action for yourself.

La Salle Matrix Thinking don’t just talk about Innovation, his company actually does it! They practice what they preach and operate their own product development hub that commercialises their own products and gets involved in creation, product development, IP, marketing and commercialisation. They understand business from idea to market, create innovation champions as they work and share the knowledge of how you can do the same.

Roger La Salle has presented at conferences and events the world over. With audiences of up to 5,000 and three TED talks to his credit he is regarded as one of the foremost speakers on his topics of innovation, opportunity capture, business building and innovation training. As a past CEO of the Victorian Innovation Centre in Australia and present Director, “Chair of Innovation” at “The Queens University” in Belfast and a former regular panellist on the ABC television program “The New Inventors” his credentials are unchallenged.

You will be spell bound as you see opportunities materialise before your very eyes as Roger speaks and draws on a white board. Roger’s “Futurism” work is not the abstraction of fanciful flying cars, antigravity boots, brain reading computers and the like but is mathematically precise in the plot of an industries trajectory over time and the extrapolation to a predictable future.

Keep up to date with the other presentations and registration information on www.hawaii2017.com

Leveraging off past ARM Spring Meetings which focus on Senior Managers within the Roto industry, the 2017 program has been carefully and specifically designed for maximum professional development for Senior Executives in both the rotomoulding sector and its supply chain.

Focussing on stories of success and lessons learned within the rotational molding industry, the program will compare and compliment the experiences of molders from the USA and Australasian regions as well as a world quality practical workshop on...

This tour includes the meeting in Hawaii. Registration is open so visit www.rototour.com for all of the information on factories and locations.
This year’s ARM-CE meeting will be a 2 day event, with a company visit, practical trials and table top exhibition on the first day, and the more classical presentation style on the second day.

On the 7th of November 2016 we will meet at 12.00 o’clock at PlasTec Technology; Arndtstraße 9-11; 24610 Trappenkamp; Germany; www.plastec-technology.com

The event will kick-off with a company tour of our moulding member PlasTec Technology GMBH. We are grateful that following the company tour, PlasTec will enable us to do some practical trials on their machinery on sight but also for providing space for hosting the supplier’s table top exhibition.

The idea of this practical day is to showcase various news available for rotational moulding right on a rotomoulding machine, as well as demonstrating on shop floor techniques and products related to rotomoulding production – but also to eventually generate questions from the audience.

Following an interesting practical day we meet at the Vitalia Seehotel (www.vitaliaseehotel.de) [which is also the venue for the second day of the meeting] for a relaxed dinner with local seasonal food specialties.

On second day, 8th of November, we will start at 9.00 am with some ARM-CE internal reports and election. After a coffee break the program will continue with technical presentations of various suppliers. Interrupted by a little lunch break the event will be closed with a farewell coffee /cake at 3.30 pm.

While at present the schedule of the event is yet under development, we still accept proposals of interested suppliers for presentations and/or practical demonstration.

As is organized by ARM-CE, the official language of the event will be German, however international visitors are of course welcome, but have to be aware there are no translators hired.

(Following this ARM-CE event, the board of the ARM-CE board is inviting interested sponsors of the ARMO 2018 event in Hamburg - for a sight check of the university and Hamburg, exhibition floor and potential sponsoring deals on 9th of November)

Registration for members of ARMO affiliates (incl. dinner) is 200 € per person; [Non ARMO 500 Euro per Person], table top exhibition or demonstration on the practical day is 400 Euro [Non ARMO 800 Euro]; General Sponsoring 500 €.

While participation of this event will be limited, registration will be handled on a first come first serve basis.

For registration or any further information please get in touch with:

Oliver Wandres / MAUS GmbH
ow@maus-gmbh.de

Karsten Krohne / PlasTec GmbH
kkrohne@hako.com
Following the publication of the results of its Annual Accident Survey in July, the British Plastics Federation is proud to announce that its members’ accident rates has decreased for the fifth consecutive year, with cuts being the most common type of accident in 2015 with a 22% share. This category included injuries caused by knives and those due to non-knife related cuts such as those caused by sharp edges, contact with machine blades, trimming tools and cardboard packaging.

The survey also shows that “handling, lifting or carrying” are another major cause of accidents within the industry, with a 16.7% share of the total. Closely following are accidents caused by impacts against stationary object (16.4%) and slips/trips/falls (15.5%).

Francisco Morcillo, BPF’s Head of Public & Industrial Affairs, said: ‘We are delighted to see that engagement in the SIMPL (Safety In Manufacturing PLastics) project has particularly enhanced the performance of BPF members. The results show, once more, that health and safety continues to be a top priority for the UK plastics industry.’

For further information on SIMPL or would like a copy of this year Annual Accident Survey report, contact Sara Cammarano at scammarano@bpf.co.uk or go to http://www.bpf.co.uk/health_and_safety/Default.aspx

In the same month, the BPF published the results of its biannual Business Condition Survey. Members received the survey immediately after the announcement of the Brexit referendum results, thus the survey is a good meter of BPF Members attitude toward Brexit.

According to the survey BPF members are optimistic when asked about their turnover projection and almost 51% of respondents foreseeing an increase. Companies forecast on profitability were more guarded with only 20% predicting an increase (down from 32% in the previous survey), with many companies citing exchange rates and the subsequent impact on raw material prices as a reason. Despite these factors, more than half of the companies surveyed are expecting that their profitability would not change.

The BPF is also encouraging its members to benefit from its ‘Lunch and Learn’ initiative that aims to provides members with the opportunity to improve their businesses through a series of webinars that are free to attend. Each webinar will take place from 12pm until 12.45pm and will feature an interactive Q&A session. Next webinar will be on “Capitalising on your energy assets to unlock maximum revenue for the Plastics Industry” (6th October).

For further information about the webinar, contact Paul Baxter at pbaxter@bpf.co.uk
PartnerPlast has an ambition to become the most modern rotomoulder in the world. This is the reason why we are doing what we are doing. Despite the tough times in the industry, we are investing almost 50 million Norwegian kroner in a new factory and a brand new rock and roll machine. This gives us new opportunities in the market, and it also strengthens our goal of being among the top rotomoulders in the world, says Tom Samuelsen, Managing Director of PartnerPlast.

PartnerPlast is located in Åndalsnes, a little town surrounded by some of the most beautiful fjords and mountains the coastal landscape in Western Norway has to offer. Unexpectedly and almost against all odds there is a plastic cluster, a group of companies with a great knowledge of plastics and rotational moulding with roots dating all the way back to 1940s, in Åndalsnes.

- We are now going to move all our production in Åndalsnes under the same roof, and the total area of the site will be over 4200 square meters. The size of the new development is 3200 square meters and this alone is an investment of 40 million Norwegian kroner. Furthermore, we are also investing in a brand new rotational moulding machine, says Tore Brandstadmoen, Plant Manager at PartnerPlast.

- The premises and the machinery are going to be state of the art. As a Company we will become leaner and have higher production efficiency and with the new machine we will be able to produce much bigger products than before. All in all his will give us new opportunities in the existing market, as well as access to new markets, says Tom Samuelsen.

Nordic ARM Academy

Nordic ARM Academy is an opportunity for Nordic ARM members to train their operators and supervisors in Rotational Moulding. Nordic ARM Academy will be arranged in Borås 14th and 15th of February 2017.

Agenda:

**Day 1**
- 09:45 Welcome
- 10:00 Mould Handling and Maintenance
- 12:00 Lunch
- 12:45 Proper use of release agent
- 15:00 Quality control and parts inspection

**Day 2:**
- 08:00 Effects of pigmentation
- 10:00 Setting your machine correctly
- 12:00 Lunch
- 12:45 Problem solving
- 15:00 Questions and Answers

If you would like to train your operators, please send an email for registration to info@nordicarm.org before 31.12.2016
The 3rd ROTOPOL Spring Meeting took part in beautiful mountain resort of Świeradów Zdrój located on the south of Poland, close to German and Czech border. Almost 100 people from Central and Eastern Europe, and also from other countries, came to talk about lean management in rotomoulding and not only. It was a great opportunity to gain and broaden knowledge of the rational management of the company resources.

The event program included interesting lectures given by Polish and international experts of rotational molding, specialist workshops and TABLE TOP exhibition. At the end Rotopol Meeting participants could relax during Casino Show with prizes and disco. The motto of the meeting was “Let’s meet in a good company”. And it was appropriate motto for this conference.

Rotopol Board thanks all the Participants and Sponsors who supported the event and helped to make it a great success. The next Rotopol Conference 2017 is planned to be organized on the north of Poland at the seaside. We already look forward to meeting you there!
CONSTA COOL developed and started manufacture of Eutectic Freezers by rotomoulding in 2012 in India. This led to development & conversion of the high profile and eye catching Magnum Ice cream Vending Cart, that was launched in India in 2015.

StAR moulder member company Consta Cool based in Ahmedabad, India manufactured the rotomoulded eutectic freezer and canopy contents of the cart. Consta combined the best of design aesthetics and engineering in the world class eutectic freezer and the cart.

The freezer which has advantages over the traditional metal bodies of being rust and leakage free handles with great efficiency the high ambient temperatures of the Indian street in summer.

Consta Cool had identified that Roto moulded plastic would have a big advantage in making a good long lasting body for a Vending Cart. Since the conventional metal Vending Carts had flat rectangular bodies, Rotomoulding could give design flexibility, so necessary to give a unique look and character to the Vending Cart.

Consta Eutectic Freezers are equipped with better Eutectic Mediums and state of the art refrigeration system, which ensure that during vending operations in extreme heat and 12 - 14 hours on the street the temperature of the ice cream stored, is maintained below -18 deg C.

In 2013 Consta was approached by Hindustan Unilever to develop a “Freezer on wheels” for their ice cream vending operation. The HUL team provided the technical inputs on what was required from the freezer, its dimensions and the performance parameters. The freezer was developed, the moulds were made and the trial order was executed. It was then put to the sternest test in the toughest region of India.

The freezer successfully passed the test and in 2014, a design firm was appointed by HUL to develop a cart for vending of its premium “Magnum” brand in India. Consta Cool worked with the design team and together developed the canopy components.

The moulds for the freezer and canopy components were designed and manufactured in house at Consta Cool. The parts were moulded on a state – of – the – art Reinhardt machine with local butane, and hexane from Matrix Polymers.
UPCOMING EVENTS

2016

NOV 7-8
ARM-CE ANNUAL MEETING
Bad Segeberg & Trappenkamp
Further Information: www.rotational-moulding.de/

JAN 29-31
STAR 2017 ROTOMOULDING CONFERENCE
City/Country: Jaipur
Further Information: http://starasia.org/

JAN /FEB
NORDIC ARM ACADEMY, TRAINING FOR OPERATORS AND FOREMEN
City/Country: Borås Sweden
Further Information: http://nordicarm.org/

MAR 8-9
ARMSA ROTATION 2017 CONFERENCE
City/Country: South Africa
Further Information: www.armsa.co.za/

MAR 19-28
ROTOTOUR 2017 CHINA
City/Country: China & Hawaii
Further Information: www.rototour.com

MAR 26-28
ARM/ARMA JOINT EXECUTIVE MEETING 2017
City/Country: Maui, Hawaii
Further Information: www.hawaii2017.com

JUN 25-27
ROTOMOULD 2017
City/Country: Melbourne, Australia
Further Information: www.rotoimouldconference.com

SEP 26-28
ROTOPLAS 2017
SEPTEMBER 26-28, 2017
City/Country: Donald Stephens Convention Center, Chicago/Rosemont, IL
Further Information: www.rotomolding.org/events