



RMD News

The Rotational Molding Division of
SPE Newsletter



2nd Quarter 2014

Volume 14 Issue 2



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Chairman's Message



Rob Donaldson

Hello fellow RMD Members.

Summer weather is here and the solstice is less than a month away. This brings us longer days and more sunshine. This also brings on the happy time for us, and our children, called summer vacation. Enjoy your vacation and recharge, as the next thing you know we will

begin to gear up for the summers end and the beginning of the holiday season.

The RMD ANTEC2014 session was successful with some very good presentations. Please look for them in future newsletters. Again, congratulations to the Technical Committee on ensuring our great week in Las Vegas.

Thanks for joining us at RMD TOPCON 2014 in Independence, OH. This was a great program and I, for one, was very excited to be there. The program held true to its tagline *"Learn, Strategize and Take Action Today"* and offered benefits for both your personal growth and your business development.

Consider becoming an RMD volunteer; to contribute to any or all of these activities both directly and indirectly. The time commitment can be as minimal as you make it. Nothing makes you feel better, or facilitates personal growth, more than giving.

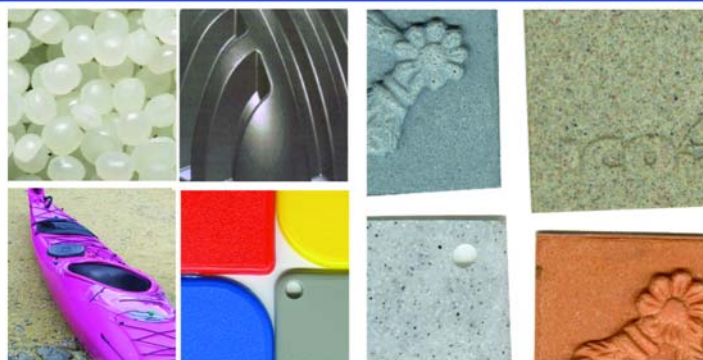
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Yours in Rotomolding,

Rob Donaldson
RMD Chair



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Consultants Corner with Bruce Muller



POLISHING RESIN TO REDUCE SCRAP

Mix Dry Color and Polish Resin in One Step

The Problem

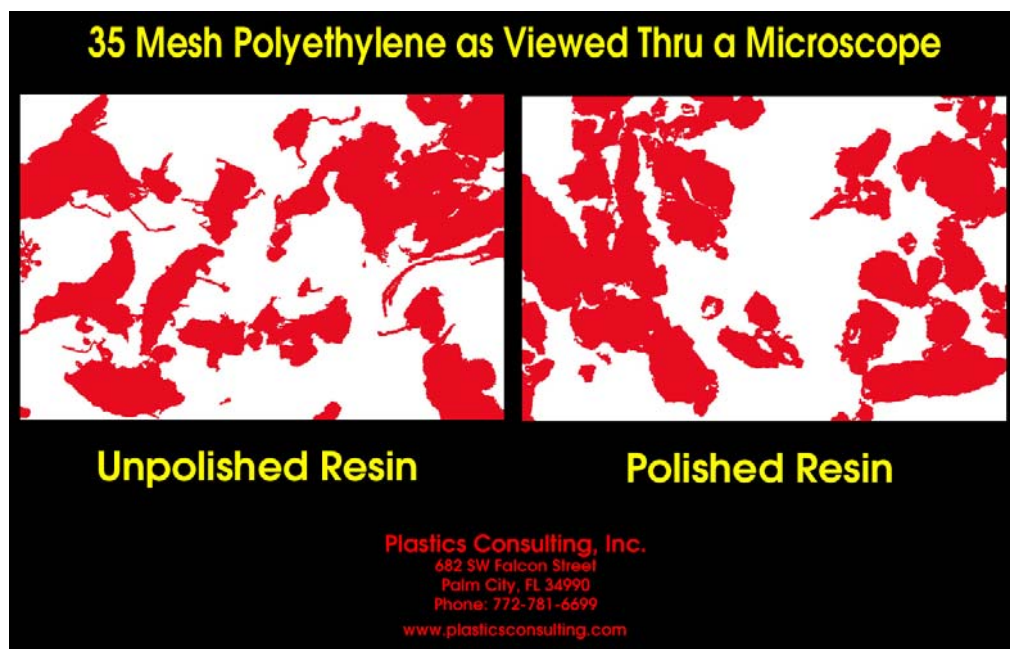
Polyethylene powder when improperly pulverized causes scrap. Pin holes, leaks, long cycles and brittle parts may be the result of rotationally molding sub standard powder. Powder, when not pulverized to industry standards, will not flow properly in the mold, especially around inserts and threads. It will bridge and will not densify quickly causing slow densification (bubble removal) requiring a longer oven cycle. Reduced impact and part brittleness may occur if the cycle is not extended to compensate for excessive air trapped in the part wall during mold rotation. Powder grind quality may be determined using the Pourability (Flowability ARM3-5.3) Funnel and Bulk Density test.

Polishing Powdered Polyethylene

Polyethylene, natural or colored powder, with tails and hairs from pulverizing at too low a temperature, dull blades or the result of other pulverizing inconsistencies, can be improved by polishing the resin. Polishing quality powder will also improve it, enabling it to flow better in the mold resulting in shorter cycles and less scrap. Polishing also increases the bulk density, allowing easier charging of difficult to fill molds.

Polishing is Quick and Easy

Polishing polyethylene is accomplished in a **high intensity mixer** by mixing the powder to **130°F (55°C)**. Frictional shear, from the high speed blades, creates the heat in the powdered resin. When Dry Color is used, mixing to 130°F will almost always insure the Dry Color is mixed properly into the powdered resin. In other words, mixing color and polishing the resin at the same time is accomplished in **one easy step by mixing in a high intensity mixer to 130 degree temperature**, not by mixing to a set time.



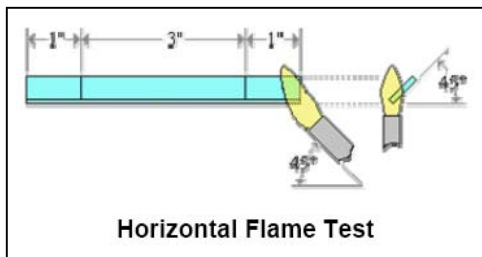
Material Thoughts... with Mike Gehrig

CAN YOUR RESIN TAKE THE HEAT? UNDERSTANDING UL-94 FLAME RATINGS

UL flame ratings group materials into categories based on their flammability. UL 94 covers two types of testing: vertical burn and horizontal burn.

Horizontal Testing (HB)

Procedure: A specimen is supported in a horizontal position and is tilted at 45°. A flame is applied to the end of the specimen for 30 seconds or until the flame reaches the 1 inch mark. If the specimen continues to burn after the removal of the flame, the time for the specimen to burn between the 1 and 4 inch marks are recorded. If the specimen stops burning before the flame spreads to the 4 inch mark, the time of combustion and damaged length between the two marks is recorded. Three specimens are tested for each thickness.



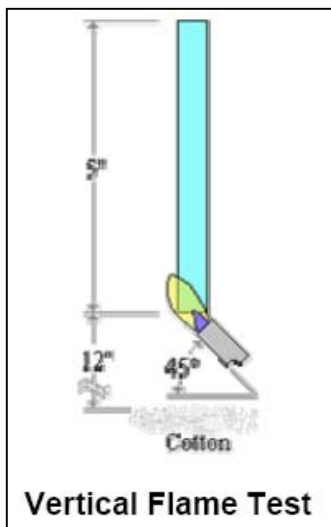
Horizontal Rating Requirements HB

*Specimens must not have a burning rate greater than 1.5 inches/minute for thicknesses between 0.120 and 0.500 inches and 3 inches/minute for thicknesses less than 0.120 inches.

*Specimens must stop burning before the flame reaches the 4 inch mark.

Vertical Testing (V-0, V-1, V-2)

Procedure: A specimen is supported in a vertical position and a flame is applied to the bottom of the specimen. The flame is applied for ten seconds and then removed until flaming stops at which time the flame is reapplied for another ten seconds and then removed. Two sets of five specimens are tested. The two sets are conditioned under different conditions.



Vertical Ratings Requirements:

V-0

Specimens must not burn with flaming combustion for more than 10 seconds after either test flame application.

Total flaming combustion time must not exceed 50 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens must not drip flaming particles that ignite the cotton.

No specimen can have glowing combustion remain for longer than 30 seconds after removal of the test flame.

V-1

Specimens must not burn with flaming combustion for more than 30 seconds after either test flame application.

Total flaming combustion time must not exceed 250 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens must not drip flaming particles that ignite the cotton.

No specimen can have glowing combustion remain for longer than 60 seconds after removal of the test flame.

V-2

Specimens must not burn with flaming combustion for more than 30 seconds after either test flame application.

Total flaming combustion time must not exceed 250 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens can drip flaming particles that ignite the cotton.

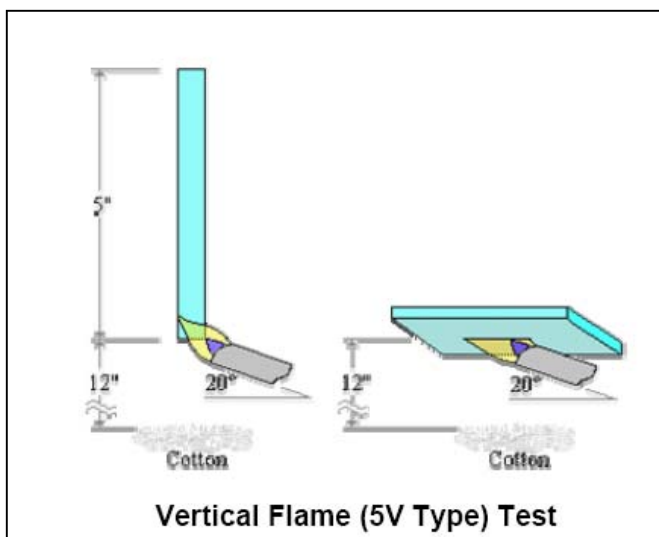
No specimen can have glowing combustion remain for longer than 60 seconds after removal of the test flame.

Vertical Testing (5V, 5V-A, 5V-B)

Testing is done on both bar and plaque specimens. Procedure for Bars: A bar specimen is supported in a vertical position and a flame is applied to one of the lower corners of the specimen at a 20° angle. The flame is applied for 5 seconds and is removed for 5 seconds. The flame application and removal is repeated five times.

Procedure for Plaques: The procedure for plaques is the same as for bars except that the plaque specimen is mounted horizontally and a flame is applied to the center of the lower surface of the plaque.

Material Thoughts... Understanding UL-94 Flame Ratings with Mike Gehrig CONTINUED



5V

Specimens must not have any flaming or glowing combustion for more than 60 seconds after the five flame applications.

Specimens must not drip.

Specimens must not be destroyed in the area of the flame.

5V-A

Specimens must not have any flaming or glowing combustion for more than 60 seconds after the five flame applications.

Specimens must not drip flaming particles that ignite the cotton.

Plaque specimens must not exhibit burnthrough (a hole).

5V-B

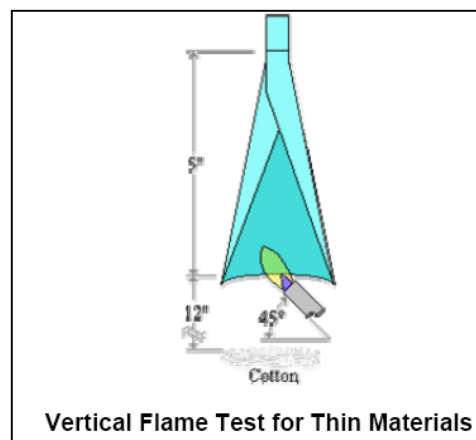
Specimens must not have any flaming or glowing combustion for more than 60 seconds after the five flame applications.

Specimens must not drip flaming particles that ignite the cotton.

Plaque specimens may exhibit burn through (a hole).

Vertical Testing of Thin Materials (VTM-0, VTM-1, VTM-2)

This test is used for materials that are thin, or are too flexible or may distort, shrink or flex during ordinary vertical testing. Procedure: An 8x2 in specimen is rolled longitudinally around a 1/2 in diameter mandrel and taped on one end. When the mandrel is removed the specimen forms a cone. The cone is supported in a vertical position and a flame is applied to the bottom of the specimen. The flame is applied for three seconds and then removed until flaming stops at which time the flame is reapplied for another three seconds and then removed. Two sets of five specimens are tested. The



VTM-0

Specimens must not burn with flaming combustion for more than 10 seconds after either test flame application.

Total flaming combustion time must not exceed 50 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens must not drip flaming particles that ignite the cotton.

No specimen can have glowing combustion remain for longer than 30 seconds after removal of the test flame.

No specimen shall have flaming or glowing combustion up to a mark 5 inches from the bottom of the specimen.

VTM-1

Specimens must not burn with flaming combustion for more than 30 seconds after either test flame application.

Total flaming combustion time must not exceed 250 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens must not drip flaming particles that ignite the cotton.

No specimen can have glowing combustion remain for longer than 60 seconds after removal of the test flame.

No specimen shall have flaming or glowing combustion up to a mark 5 inches from the bottom of the specimen.

VTM-2

Specimens must not burn with flaming combustion for more than 30 seconds after either test flame application.

Total flaming combustion time must not exceed 250 seconds for each set of 5 specimens.

Specimens must not burn with flaming or glowing combustion up to the specimen holding clamp.

Specimens can drip flaming particles that ignite the cotton.

No specimen can have glowing combustion remain for longer than 60 seconds after removal of the test flame.

No specimen shall have flaming or glowing combustion up to a mark 5 inches from the bottom of the specimen

RMD People in the News

Rex Kanu Receives Past Presidents' Award

During the RMD's June 2014 TOPCON, Division President, Rob Donaldson, announced that REX KANU had been elected to receive this year's Past Presidents' Award. This award, which is known as the Lifetime Contributions Award acknowledges an RMD member for major contributions to the Division over a long period of time.

Rex Kanu is a Professor at Ball State University's Department of Industrial Technology. The path leading to his receiving this award started in 1999 when Barry Aubrey and I took Rex to lunch during an Association of Rotational Molders conference in Cleveland, Ohio. During that meeting we convinced him to accept an appointment as Treasurer of the newly formed SPE Rotational Molding Division. Rex accepted that position as the Division's first and only Treasurer. This, once again, proves that there is no such thing as a free lunch.

Rex has now served with distinction for 15 years. He doesn't make much noise, but the Division's financial records are always up to date. All of SPE and the IRS forms are properly prepared and filed on time.

While all of this was happening, Rex also served on the Board of Directors of his local SPE section, and represented that group on SPE's National Council.

Rex has now served under, and impressed, every President the Division ever had. It comes as no surprise that his selection to receive this honor was by a unanimous vote of the Past Presidents.

In 2006 the Past Presidents of the RMD created the Lifetime Contributions Award to acknowledge exemplary service to the Division over a long period of time. Eligibility for this award is based on over 10 years of membership in the Division and contributions to the RMD for time, energy, dedication, funds and/or company contributions. Anyone can nominate a member for this award by contacting an RMD Board Member.

Past recipients of this award are as follows:

Jon Ratzlaff	2007	Linda Xu	2011
Jim Throne	2008	Bruce Muller	2012
Bob Swain	2009	Rex Kanu	2013
Mike Paloian	2010		

Please join the RMD Past Presidents in congratulating Rex Kanu on receiving the Division's highest member award.

Submitted by,
Glenn L. Beall
SPE RMD
Founder & Past President



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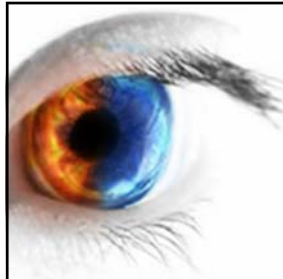
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Industry News

Rotomolded car concept gets a boost from agriculture industry

By: James Snodgrass

EUROPEAN PLASTICS NEWS

March 21, 2014



It has been more than three years since Paris-based Total SA introduced a concept car showcasing the potential of using rotational molding to build a lightweight monocoque shell.

Unlike a traditional automotive monocoque, an internal skeleton onto which an exoskeleton of body panels is added, the concept car from the petrochemical giant showed the possibilities of using multilayered rotational molding to make a structure that is both

chassis and skin, internal and external.

Highlighting the properties of its Bio TP Seal polymer, the Total Concept Car had a multi-layered rotational molded body with a paintable outer shell, foamed inner structure (providing stiffness and insulation, whilst keeping weight down) and interior surface.

Although Total still has no plans to manufacture the vehicle, the concept, shown at the Paris and Frankfurt motor shows, wowed the traditional car makers – some of whom showed significant interest in the concept.

Even if the concept has not made it to auto showrooms, though, some of the technology is moving on to an industrial application — providing both structure and body of the cab of an agricultural vehicle.

The VSV (Viability Service Vehicle), made by French manufacturer, Noremat, is an adaptable vehicle for agricultural and highway maintenance functions designed to be fitted with one, two or three pieces of operational equipment. Depending on specification, it can be used for mowing, pruning, collecting off-cuts, grinding up-branches, gritting and various other uses.

Originally Noremat, based in Ludres, France, had considered using a nonrecyclable grade of polyester for the VSV's chassis, bodywork, fuel tanks and access panels, produced through thermoforming. However, after consulting with Total and project designers Evok, the France-based design consultants, the entire project was reimaged with rotational molding in mind.

Continued on next page

Industry News *continued*

TBio TP Seal is a modified polyethylene, created using metallocenic catalysts, which is blended with polylactic acid. The Total Concept Car's structure was made in single molding cycle wherein a foamed layer is sandwiched between two outer skins.

The rotomolding process used to manufacture the VSV was developed — as with the Total Concept Car — in conjunction with the Italian rotational molding equipment manufacturer, Persico. Using Leonardo machines from Persico SpA, the temperature of the mold, and the pressure inside the cavity of the mold was precisely controlled to deal with variable wall thicknesses, the foaming process and to prevent against bubbles forming on the inside and outside of parts.

The manufacturing process takes place in a single stage. As the cab of the VSV is elevated above the ground, it doesn't have the same crash protection requirements of the Concept Car, a small, electric city car in which the occupant is situated close to ground level. It is therefore made from a single layer of rotational molded Bio TP Seal, rather than having a sandwich construction.

The fully automatic Leonardo machines ensure that rotational molding is a repeatable process, producing consistent molds time and again without human intervention. When conceived as a part made from thermoforming, the VSV's cab structure would have had seven components. By switching to rotational molding, Noremat is now able to make the cab structure in a single piece.

Likewise the side wings of the cabin are made out of a single part, rather than the proposed three-part manufacture; the rear cabin roof is made from a single part, rather than two thermoformed parts and the water tank, radiator cover, fuel tank and engine hood are all made from single, rotational molded parts. Only the wheel covers and mudguards (with integrated housing for the headlamps) are made using thermoforming. The advantages of using rotomolded Bio TP Seal, rather than metal, are many-fold. Bio TP Seal is 100% recyclable, a growing concern for vehicle

producers keen to demonstrate the sustainability of their products from manufacture to end-of-life. Structures made from Bio TP Seal result in a chassis that is three times lighter than the metal equivalent. And the ability to make a large component, such as a cab, from a single piece, in a single manufacturing process, thus contributes to greater efficiency, reduced production costs and a quicker production cycle.

Link: <http://www.plasticsnews.com/article/20140321/NEWS/140329985>

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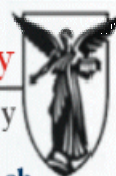
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TopCon 2014 Cleveland, Ohio June 1st-4th



Registration with Patsy Bealle and Sheri Muller



Anne Rowland of Ferry Industries Exhibiting



*RMD Chairman-Elect Gary McQuay with
Chairman Rob Donaldson*



*Jim Braeunig of Hedstrom Corporation
Keynote presentation*

Photos courtesy of Larry Schneider,
Schneider Plastics

TopCon Recap

120 Attendees

**37 New SPE
Members**

**21 Company
Exhibits**

**20 Speaker
Presentations**

**America Makes
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**Our thanks to everybody
for making TopCon 2014
a success.**

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Attendees at ballroom luncheon



*Julia Gilchrist, Pennsylvania College of Technology
presentation on micro-pellets*



*Professor Pascal Malassigne, Milwaukee Institute
of Art and Design presentation for RMD Design
Competition.*



*Sergio Zilioli, Persico, presentation on CNC molds
and Leonardo SMART machine*



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TopCon 2014

Rotational molding adopting 3-D printing

By: **Bill Bregar**

June 23, 2014

CLEVELAND

3-D printing is coming to rotational molding. Nova Chemicals Corp. got into rotomolding resin in 2006, and three years later, bought a 3-D printer to develop new product ideas, such as boats and dumpsters, according to Henry Hay, Nova application development manager. The company bought a Dimension SST 12000 printer, which builds parts in layers from CAD drawings.

Attendees at the Society of Engineers' rotomolding TopCon 2014 heard reports on the technology from Hay and Mike Hripko, an official of America Makes in Youngstown, Ohio, part of the National Additive Manufacturing institute. Hay detailed some Nova case studies. "Because our parts of rotomolding are so large, when you build models of then you're going to be using scale models," he said. That requires some design considerations, such as duplicating hinges and using two nestable parts to show double-wall construction.

You can build a model for less than \$400, Hay said, but takes 88 hours. "So what it costs is time," he said. One product, the Cosmo-brand collapsible storage container was developed five years ago by a Nova Inspirion Ventures Inc. and is rotomolded by Plasticraft Corp. in Darien, Wis. They were designed for moving companies, but the downturn in construction came just at the product launch, Hay said. "We did get sales both to the military, the Marine Corp. and to private movers both in Canada and the U.S.," Hay said.

For another product, the Dumpster mate, an entrepreneur approached Nova with an idea written on a napkin: a plastic enclosure to hide a dumpster, replacing makeshift concrete and steel ones. The enclosure would have swinging doors on the front, which the truck driver would be able to open without getting out of the truck.

Nova built a model for \$570, and 172 hours of time. The idea man took it to a trade show, where he secured enough contracts to justify making the molds. The mold-maker also used the 3-D printed model. The inventor is using Nova polyethylene for the enclosure.

TopCon attendees toured America Makes after the Cleveland conference. "This technology reduces barriers to entry," said Hripko, deputy director of workforce and educational outreach of the Youngstown center. For example, you can buy a universal cell phone holder for a car today for \$19.95, with no guarantee it will really fit. In the future, you could print one specifically for your car, for less than \$5, he said.

"Anyone can now make anything anywhere, and the only things you need is electricity, material and a computer," Hripko said.

Link: <http://www.plasticsnews.com/article/20140623/NEWS/140629972>

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Company Name and Business Address (or College) Company / College _____ Job Title: _____ Address: _____ Address: _____ City _____ State: _____ Zip: _____ Country: _____		Birth Date: (mm/dd/yyyy) _____	
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Home Address: (please provide) Address: _____ Address: _____ City: _____ State: _____ Zip: _____ Country _____ Home Phone: _____		Materials: (choose all that apply) <input type="radio"/> Composites <input type="radio"/> Polyolefins <input type="radio"/> Film <input type="radio"/> Polystyrene <input type="radio"/> General Interests <input type="radio"/> TPEs <input type="radio"/> Nylon <input type="radio"/> Thermoset <input type="radio"/> PET <input type="radio"/> Vinyls <input type="radio"/> Foam/Thermoplastics <input type="radio"/> No Interests	
<input type="checkbox"/> Preferred Mailing Address <input type="radio"/> Home <input type="radio"/> Business		Process: (choose all that apply) <input type="radio"/> Blow Molding <input type="radio"/> Injection Molding <input type="radio"/> Compression <input type="radio"/> Mold Making <input type="radio"/> Compounding <input type="radio"/> Product Design <input type="radio"/> Engineering Properties <input type="radio"/> Rotational Molding <input type="radio"/> Extrusion <input type="radio"/> Thermoforming <input type="radio"/> Fabrication <input type="radio"/> General Interest <input type="radio"/> Foam <input type="radio"/> No Interest	
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My Primary Division is (Division names are below): RMD (D42)																										
Additional Divisions are available for a fee. Check below to select additional Divisions. <table> <tr> <td><input type="checkbox"/> Additives & Color Europe (D45)</td> <td><input type="checkbox"/> Medical Plastics (D36)</td> </tr> <tr> <td><input type="checkbox"/> Automotive (D31)</td> <td><input type="checkbox"/> Mold Making & Mold Design (D35)</td> </tr> <tr> <td><input type="checkbox"/> Blow Molding (D30)</td> <td><input type="checkbox"/> Plastics Environmental (D40)</td> </tr> <tr> <td><input type="checkbox"/> Color & Appearance (D21)</td> <td><input type="checkbox"/> Polymer Analysis (D33)</td> </tr> <tr> <td><input type="checkbox"/> Composites (D39)</td> <td><input type="checkbox"/> Polymer Modifiers & Additives (D38)</td> </tr> <tr> <td><input type="checkbox"/> Decorating & Assembly (D34)</td> <td><input type="checkbox"/> Product Design & Development (D41)</td> </tr> <tr> <td><input type="checkbox"/> Electrical & Electronic (D24)</td> <td><input type="checkbox"/> Rotational Molding (D42)</td> </tr> <tr> <td><input type="checkbox"/> Engineering Properties & Structure (D26)</td> <td><input type="checkbox"/> Thermoforming (D25)</td> </tr> <tr> <td><input type="checkbox"/> Extrusion (D22)</td> <td><input type="checkbox"/> Thermoforming, European (D43)</td> </tr> <tr> <td><input type="checkbox"/> Flexible Packaging (D44)</td> <td><input type="checkbox"/> Thermoplastic Materials & Foams (D29)</td> </tr> <tr> <td><input type="checkbox"/> Injection Molding (D23)</td> <td><input type="checkbox"/> Thermoset (D28)</td> </tr> <tr> <td><input type="checkbox"/> Marketing and Management (D37)</td> <td><input type="checkbox"/> Vinyl Plastics (D28)</td> </tr> </table>			<input type="checkbox"/> Additives & Color Europe (D45)	<input type="checkbox"/> Medical Plastics (D36)	<input type="checkbox"/> Automotive (D31)	<input type="checkbox"/> Mold Making & Mold Design (D35)	<input type="checkbox"/> Blow Molding (D30)	<input type="checkbox"/> Plastics Environmental (D40)	<input type="checkbox"/> Color & Appearance (D21)	<input type="checkbox"/> Polymer Analysis (D33)	<input type="checkbox"/> Composites (D39)	<input type="checkbox"/> Polymer Modifiers & Additives (D38)	<input type="checkbox"/> Decorating & Assembly (D34)	<input type="checkbox"/> Product Design & Development (D41)	<input type="checkbox"/> Electrical & Electronic (D24)	<input type="checkbox"/> Rotational Molding (D42)	<input type="checkbox"/> Engineering Properties & Structure (D26)	<input type="checkbox"/> Thermoforming (D25)	<input type="checkbox"/> Extrusion (D22)	<input type="checkbox"/> Thermoforming, European (D43)	<input type="checkbox"/> Flexible Packaging (D44)	<input type="checkbox"/> Thermoplastic Materials & Foams (D29)	<input type="checkbox"/> Injection Molding (D23)	<input type="checkbox"/> Thermoset (D28)	<input type="checkbox"/> Marketing and Management (D37)	<input type="checkbox"/> Vinyl Plastics (D28)
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<input type="radio"/> CHECK <input type="radio"/> VISA <input type="radio"/> AMEX <input type="radio"/> MASTERCARD Card number _____ Expiration date (mm/dd/yyyy) _____ PAYMENTS MUST ACCOMPANY APPLICATION Sorry, No Purchase Orders Accepted Checks must be drawn on US or Canadian banks in US or Canadian Funds. Dues include a 1-year subscription to <i>Plastics Engineering</i> magazine—\$38.00 value (non-deductible). SPE membership is valid for twelve months from the month your application is processed. *extra savings. **European membership dues include a program fee to support SPE's activities in Europe.			By signing below I agree to be governed by the Constitution and Bylaws of the Society and to promote the objectives of the Society I certify that the statements made in the application are correct and I authorize SPE and its affiliates to use my phone, fax, address and e-mail to contact me. Signature _____ Date _____ Recommended by member (optional) ID # _____																							

RMD Interim Financial Report

SPE's Rotational Molding Division
Interim Financial Report 2013-2014
July 1, 2013 to December 22, 2013

	<u>Actual</u>	<u>Budget</u>
Cash Balance: Beginning of Period	\$61,391.45	
Cash Receipts in Period:		
SPE Rebate	\$0.00	\$0.00
Interest	\$16.55	\$0.00
Newsletter Ads/Sponsorships	\$0.00	\$0.00
Scholarships/Grants Fund	\$10.00	\$0.00
TopCon	\$2,885.82	\$0.00
 Total Income in Period	 \$2,912.37	 \$0.00
Total Cash to be accounted for	\$64,303.82	
Cash Disbursements in Period:		
Board Meetings (teleconference)	\$0.00	\$0.00
TopCon/Rotoplas	\$0.00	\$0.00
e-Newsletter Printing/Mailing	\$0.00	\$0.00
Awards (Student Papers)	\$0.00	\$0.00
Scholarships/Grants	\$0.00	\$0.00
ANTEC Expenses	\$0.00	\$0.00
BOD & ANTEC Speakers Awards	\$0.00	\$0.00
President and Past Presidents Awards	\$0.00	\$0.00
Membership Outreach	\$0.00	\$0.00
Website Hosting	\$0.00	\$0.00
Election, Ballot, Postage	\$0.00	\$0.00
SPE Product Design Comp.	\$0.00	\$0.00
Website Domain name (2013-2022)	\$440.80	\$0.00
Webinar	\$0.00	\$0.00
MISC (Bank Statement Paper Fees.)	\$6.00	\$0.00
Plastics News Advertisement	\$3,600.00	\$0.00
 Total Disbursements in Period	 \$4,046.80	 \$0.00
Cash Balance End of Period	\$60,257.02	

The Cash Balance is made up as follows:

Scholarships/Grants (savings acc.)	\$2,032.43
Checking Account	\$317.70
Savings Account	\$57,906.89
Total Cash Balance	\$60,257.02

Respectfully submitted
By
Rex Kanu
Treasurer RMD

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