



THE IN-MOLD MESSENGER

December, 2013

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2013 IMDA Symposium

The very first IMDA Symposium, presented on October 24 – 25, 2013, at the UMass Inn & Conference Center, Lowell, MA, brought together representatives from across the IML/IMD value chain. Multi-national attendees from IML and IMD molders, brand owners, label printers, substrate suppliers and equipment manufacturers all joined together in this premier educational event. IMDA is at its core an organization to advance the acceptance and growth of in-mold labeling and decorating technology through its educational programs.

Organized and presented in conjunction with the Plastics Engineering Department of the University of Massachusetts at Lowell, the Symposium was a unique learning experience offered in a non-commercial environment.

The morning session of each of the Symposium's two days opened with a presentation from the IMDA's *ABC's of IML®* seminar, followed by workshops in the afternoon. Those workshops were led by IMDA members who were knowledgeable in the workshop topic. The workshop topics were:

- Sustainability of IML and IMD
- IML-I vs IML-T
- Competing Label Technologies in the Age of "Big Box" Retail
- Printing & Die Cutting Issues
- The Digital Advantage: Myth vs Reality

The afternoon of the second day included molding equipment demonstrations at the UMass Plastics Engineering Department labs. The well-attended demonstrations, led by UMass Lowell graduate students, included injection molding, blow molding and thermoforming.

The Symposium dinner featured the 2013 IMDA Awards ceremony and presentation of the 2013 IMDA Scholarship. The winner of the \$5,000 IMDA scholarship was Michael Magaletta, an undergraduate in UMass Lowell's Plastics Engineering program.

Feedback from Symposium attendees was very positive and encouraging. IMDA's Education & Conferences committee is already planning a unique program for the 2014 IMDA Symposium.



Winners of "Best Thin Wall Package" Award at 2013 Symposium dinner

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2013 IMDA Symposium Workshops

Over the next few issues of the In-Mold Messenger, we will offer recaps of the five Symposium workshops. In this issue, our recap is from the “IML-I vs IML-T” workshop, led by Roman Artz, National Account Manager, Inland Label. The recap presented here is an amalgam of the discussions from Roman’s three workshop sessions.

IML-I vs IML-T WORKSHOP

Premise: Containers made by injection IML (IML-I) and thermoformed IML (IML-T) are competing for many of the same packaging applications.

Discussion was initially centered on four questions:

1. What are the manufacturing advantages of IML-I vs IML-T?
2. What are the cost advantages of each?
3. What are functional advantages of each?
4. How would you choose between the two for your package and why?

IML-T in North America

Discussion started around the limited use of IML-T in North America (NA). At the present time, only one molding company in the US has embraced the technology – Tech II. Yet, it is an IML technology that is showing growth in Europe. Question was asked: “Why.” The answer was that it basically boils down to the following:

Many of the larger molders in NA have devoted resources to IML-I and have gone through the maturation process with that, so they may not want to take on the challenge of being ‘first’ with a new - at least to NA - labeling technology. Similar to the development of IML-I in North America, the consensus was that the smaller, more entrepreneurial molders would drive IML-T development to begin with, and as it developed, the larger molders would take it on.

Cost of IML-T vs IML-I

In the first session, we were fortunate to have Michael Provini, Sales Manager from Illig LP, USA present and he provided some insight into some of the advantages/disadvantages between IML-I & IML-T from his perspective. According to Michael, IML-T is the more ideal technology for thin wall containers, and has faster through-put over IML-I for thin wall applications. Illig has three systems in NA and they each can output 27,000 parts per hour. The equipment has good “adaptability” and easy change-out for different labels. Tools also can be easily changed. Container size is limited as compared to IML-I, with IML-T largest size being the Eurotub. Cost for an IML-T system can run from about \$1.3MM - \$1.4MM and up, not including the tool.

Functional Comparison of IML-T vs IML-I

For short production runs, the belief is that IML-I is perhaps better suited than IML-T because set-up is “not as intensive” for IML-I. Like IML-I, IML-T cycle times vary depending upon production factors: i.e. size of part, number of cavities, wall thickness, etc. Incorporating labeling into thermoforming can double the cycle time for IML-T. Commonly, cycle times for injection molding do not increase to that degree when including the labeling process.

Part of the reason for the increase in cycle time for IML-T vs. IML-I comes from the fact that often there is at least one, if not two, additional steps in the transfer process from picking the label out of the label basket to placing the label in the mold for IML-T. This additional step in the transfer process for IML-T can result in a higher degree of variation in label placement. However, improvement in label placement for IML-T is being addressed by Illig, for example.

Labels for IML-T

Because IML-T involves both lower heat and less air pressure in the molding process than IML-I, label substrate requirements are different for the two molding methods.

In order for the label to bond to the part during thermoforming, label substrates for IML-T require a lower melt point. Therefore, issues can arise when the mold temperature is too low, resulting in poor label adhesion to the part, or when temperature is too high, resulting in the label melting.

The use of less air pressure in the thermoforming process than what is employed in injection molding can also present a challenge to the IML-T labeling process. Air can often be trapped between the label and the thermoform plastic sheet, requiring a way to evacuate the air in order to prevent air pockets or ‘blisters’ trapped between the label and the formed part. Substrate suppliers and label converters are both employing different methods to address this issue.

Since label substrates do need to be engineered specifically for the unique requirements for IML-T and since there is relatively low demand for IML-T labels at this time in North America as compared to label demand for IML-I, IML-T substrates are currently produced only in Europe. Treofan offers a 60 micron cavitated PP material that is commercial in both Europe and North America. Taghleef offers a 65 micron cavitated material that is commercial in Europe at the moment and will soon be commercialized in North America. Both Innovia and Yupo are in development of their IML-T substrate offerings.

Continued on page 3

2013 IMDA Symposium Workshops (continued)

Barrier Packaging with IML-T

Discussions then moved to the development of oxygen barrier packaging and whether IML-I or IML-T may be the better solution to address the growing demands for this type of packaging. Label converters and some molders in the sessions voiced their concerns regarding the in-mold label being the functional barrier for barrier IML, since the label would need to maintain 100% seaming integrity to be compliant as the barrier. Could this be verified with vision systems? What would be considered a viable scrap rate for non-compliant seams; and who would be liable if non-conforming labeled containers did make it to the retail shelf? These were all brought-up as hurdles for IML-I.

On the other hand, since functional barrier properties can be employed more uniformly in the thermoform plastic rolls, the label substrate would not need to be the functional barrier for IML-T. So consensus among the participants was that barrier IML-T may be a more cohesive solution for shelf stable food packaging.

Unanswered Questions

Finally, from the third session, two questions were raised but not answered before the session ended:

1. In IML-T, what is the limitation on part depth?
2. When thermoforming, how consistent is wall thickness? Particularly, do radius corners suffer from elongation of the plastic sheet?

If you would like to contribute answers to these two questions, please contact ron.schultz@imdassociation.com.

IMLCON™ & IMDCON™ 2014

AWA Alexander Watson Associates will present IMLCON™ & IMDCON™ 2014, February 19 – 21, 2014, at the Hyatt Regency Phoenix, Phoenix, AZ, USA. The full conference program is available at this link: https://www.awa-bv.com/download/event-brochures/IMLCON_and_IMDCON_2014_Brochure.pdf

AWA
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AWA is offering IMDA members a 10% registration discount. To apply for the discount, click on this [link](#) and quote "IMDA10%" in the remarks field.

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New Members



IMDA is pleased to welcome these new corporate members:

Emerald Corporation, www.emeraldcorporation.com
In Mold Technology, www.inmoldtechnology.com

IMDA now accepts credit cards for payment of new member or membership renewal dues on its website at www.imdassociation.com.

Mark Your Calendar...

Here are some IML/IMD-related events scheduled for the coming months:

February, 2014

- **2014 IMLCON & IMDCON**, February 19-20, 2014, Phoenix, AZ www.awa-bv.com

March, 2014

- **Molding 2014**, March 2-5, 2014, New Port Beach, CA www.ecm@executive-conference.com

April, 2014

- **SPE Thermoforming Europe**, April 3-4, 2014, Prague, Czech Republic, www.4spe.org
- **Antec (Decorating & Assembly Div.)**, April 28-30, 2014, Las Vegas, NV www.4spe.org

May, 2014

- **ABC's of IML®**, May 8, 2014, Skokie, IL www.imdassociation.com
- **Thin Wall Packaging (AMI)**, May 20-21, 2014, Chicago, IL www.amiplastics-na.com

September, 2014

- **Label Expo USA**, Chicago, IL, September 9-11, 2014 www.labelexpo-americas.com
- **SPE Thermoforming Conference**, September 15-18, 2014 Chicago, IL www.4spe.org

October, 2014

- **2014 IMDA Symposium**, October, 2014, Chicago, IL www.imdassociation.com
- **Fakuma**, October 14-18, 2014, Friedrichshafen, Germany. www.fakuma-messe.de/en

November, 2014

- **Pack Expo International**, November 2-5, 2014, Chicago, IL www.packexpo.com



New Year's Resolution: Bring a Friend

Happy New Year from the IMDA!

It is that time of year when we look back at what we have done and we make resolutions on what we will do in the coming year.

As you know, the IMDA did a lot in 2013. We took part in multiple trade shows, conducted our popular Awards competition and we launched our first educational symposium in cooperation with UMass Lowell. Additionally our discussion pages on the web site saw more traffic, durable in-mold received more interest and attention and our membership grew -- slightly.

Unfortunately it is that last item -- our membership-- that is still not where it should be. The IMDA needs growth in our membership to stay viable and continue to offer our industry support. So this year, I believe we should all resolve to "bring a friend." If each our member companies encouraged one other company to join our association, we would double in size.

It seems like a really easy resolution. Ask a friend to join the IMDA, to be part of expanding the knowledge and potential of in-mold labeling and decorating. It's that easy. So make the resolution and I will do the same.

It would be great to look back at 2014 and say we doubled our membership!

Happy New Year!

~ Bob Travis, President, IMDA

"...we should all resolve to bring a friend."

IMDA thanks its Gold Sponsor.



Taghleef Industries

IN-MOLD DECORATING ASSOCIATION

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IMDA is an organization of molders, printers, material suppliers, equipment suppliers and others committed to the development and growth of in-mold decorating products, technologies and markets.

Its mission is to raise the level of awareness and acceptance of in-mold decorated durable products and packaging by OEMs, end users and marketers.

IMDA equally represents and supports all of its member companies across the entire in-mold decoration supply chain.



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