

Plastics News

You may not reproduce, display on a website, distribute, sell or republish this article or data, or the information contained therein, without prior written consent. This printout and/or PDF is for personal usage only and not for any promotional usage. © Crain Communications Inc.

May 26, 2021 01:12 PM

Imflux technology expands Haitian capabilities, post-consumer resin use

CATHERINE KAVANAUGH □ □

Plastics News Staff



Imflux

Imflux, a subsidiary of Procter & Gamble Co., and Absolute Haitian teamed up for the "deminar" online demonstration.

Haitian is integrating Imflux processing software as an option on servo-hydraulic and electric injection molding machines sold in the U.S. and Canada.

Imflux Inc., the Procter & Gamble Co. subsidiary that developed low-pressure injection molding technology, is showing how machine builders are using its hardware and software in an online series of demonstrations starting with the world's largest machinery maker, Absolute Haitian.

Hamilton, Ohio-based Imflux and Worcester, Mass.-based Absolute Haitian Corp. have common customers, have been working together since 2017 and recently signed a distribution agreement.

Haitian will integrate Imflux processing software as an option on its servo-hydraulic and Zhafir electric injection molding machines sold in the U.S. and Canada.

The collaboration gives conventional molders access to a platform that optimizes processes, goes beyond their proprietary technology, and will allow them to take on more projects, according to Mike Ortolano, an owner and the chief technology at Absolute Haitian Corp.

Absolute Haitian is an exclusive distributor for Haitian International Holdings Ltd. of Ningbo, China, and both companies have been taking on more work. The global press builder had a record year in 2020 and sold more than 43,000 injection molding machines. Sales increased more than 20 percent to \$1.8 billion with exports contributing \$537.5 million.

The partnership with Imflux expands the capabilities of Haitian machines, Ortolano said.

For example, processors can run more sustainable materials, such as post-consumer resin (PCR), on Haitian and Zhafir molding machines with less energy, wear and waste, according to company officials.

"The technology is very interesting to us. We feel it gives processing opportunities, it goes outside the box of conventional processing utilizing the low and constant pressure platform that automatically recognizes changing conditions and adapts in real time," Ortolano said during a May 25 webinar and live demonstration, or "deminar," as the Imflux marketing team called it.

"The Imflux platform simplifies process controls," Ortolano continued, "particularly in certain areas like using wide-spec material, which is typical now with people struggling to find resin. They're having to look at sustainable resins, more recycled materials and those sorts of things."

The demonstration featured a 618-ton Haitian Jupiter III two-platen, servo-hydraulic press with Imflux technology. The JU5500 III ran a four-cavity housewares mold — two bowls, four spoons and a lid — made from recycled polypropylene in a machine cell with a Hilectro servo robot and Fanuc collaborative robot.

Demonstration viewers could input their addresses to receive samples of the housewares to examine up close, similar to a trade show giveaways.

"What we enjoy about imflux is the precise control of the melt flow front," Ortolano said. "That gives us the ability to pack thin walls at lower speeds and pressures compared to conventional processing techniques."

The Imflux system is suitable for all Haitian markets from medical to automotive, but the machine builders expect the first adopters to be molders running wide-spec regrind materials. Imflux allows for wider viscosity shifts in materials, including greater amounts of recycled material, while improving throughput, according to officials from the two companies.



Imflux

Panelists discuss the project during a May demonstration.

Geometry dictates velocity

The plastics industry approach to utilizing more sustainable resins is fraught with problems, according to Brandon Birchmeier, Imflux technical director of innovation.

"We're trying to turn PCR into virgin equivalents, which makes them very expensive and limits availability," he said.

Rather than ask the resin supplier to transform recycled streams into virgin-like materials, Imflux came up with a way for the material to control the machine.

"The Imflux technology allows for that material to realize wide viscosity shifts without transferring that risk into the process," Birchmeier said. "As material viscosity changes, our algorithms take over and adjust the process for you. We call this auto viscosity adjust."

The technology for automatic tuning addresses an unmet need, according to Imflux Chief Technology Officer Gene Altonen.

"This need simply isn't really met elsewhere from other technology, which is to be able to take materials that vary vastly in viscosity and even shot-to-shot vary significantly and be able to adapt to those changes in real time without the need for an operator there babysitting that press and trying to keep it running," Altonen said. "It's going to make those adjustments on behalf of the operator."

In a chat panel, another Imflux expert offered this explanation about how the approach is different.

"Instead of a set velocity with a varying, usually high-peak pressure, Imflux has a varying velocity to control to a set pressure. In doing this we are allowing the part geometry to dictate velocity," the chat expert said. "With this we are able to offer a wider process window in which we can deliver benefits that are focused on each individual customers goals whether it be cycle time reduction, part weight reduction or sustainable material."



Recycling more

The demonstration used virgin and post-consumer polypropylene from Braskem, which has made recycling a high priority, according to Dave Nix, sustainability leader at Braskem.

About 19 billion tons of PP is produced annually in North America and only about 1 billion pounds is recycled, he said, and most of that is post-industrial reclaim.

"We're limited right now by having to target basically virgin-quality material levels to process in different applications," Nix said.

He likened Imflux's role in the plastics industry to that of low range of octane gasolines.

"If your car uses 87 octane, you can use anything, but if it requires 92 or 93 octane or above, then you're very limited as to what you can put in your car," Nix said. "It's the same concept. If you can

use a 10-30 melt flow as opposed to a 10-15 melt flow, you've broadened up the level of materials you can use."

Braskem is working to meet recycled material commitments for 2025 and 2030, he added. Many corporations are striving to meet sustainability goals to increase recycled content in products by those target years.

"We're going to build our way up to very large quantities of recycled resin worldwide and be over 2 billion pounds," Nix said. "We have to have good quality material for our customers."



Imflux

During the demonstration, Imflux and Absolute Haitian made housewares products such as plates and spoons. It will ship them to people who want to get their hands on the final products.

In lieu of NPE

The speakers offered input from home offices, shop floors and a series of desks styled like an ESPN show. The virtual trade show style platform also had "booths" open until 5 p.m. for processors to get more information.

Ortolano said there was much to miss about NPE — especially the people — but he didn't mind forgoing all the hard work involved to get to the point of greeting colleagues.

"The bad part is you don't get to see all the people but the good news is you don't have all the logistic chaos of moving in piles of equipment and basically setting up factories for a week and then tearing them apart," Ortolano said.

Altonen agreed.

"It's a ton of work but the camaraderie and getting the whole industry together is super exciting," he said ahead of the online program. "So we're doing the next best thing. We're going to have a live demonstration."

Imflux's next virtual trade show, which it calls its Fearless Innovation Series, is tentatively set for July 20 in partnership with Japan Steel Works Ltd.

Absolute Haitian also scheduled a June 10 virtual showcase that will feature its new third-generation injection molding machines: a Zeres III producing multi-component medical syringe plungers and a Mars III producing clear PP food containers in addition to the Jupiter III with Imflux technology producing housewares.

Inline Play

Source URL: <https://www.plasticsnews.com/news/imflux-technology-expands-haitian-capabilities-post-consumer-resin-use>