MeltFlipper® Case Study

Customer: MuCell Processes TREXEL INC

Case Study: MeltFlipper® benefits MuCell® Molders

This case study was in cooperation with Trexel, Inc. of Woburn, Mass., exclusive licensor of the MuCell microcellular technology. Imbalance has been an issue for Trexel, because customers demand part-to-part consistency in multi-cavity tools. With or without the MuCell technology, nearly all multi-cavity tools experience a shear-induced filling imbalance that affects the consistency of dimension, weight, and overall properties from cavity-to-cavity. To offer a solution to its customers who want to use the MuCell process in high-cavitation molds, Trexel and BTI chose to test the two technologies together. The "before" and "after" illustrations from a nylon material demonstrate that the MeltFlipper technology improved weight consistency by almost 93% (Figure 1).

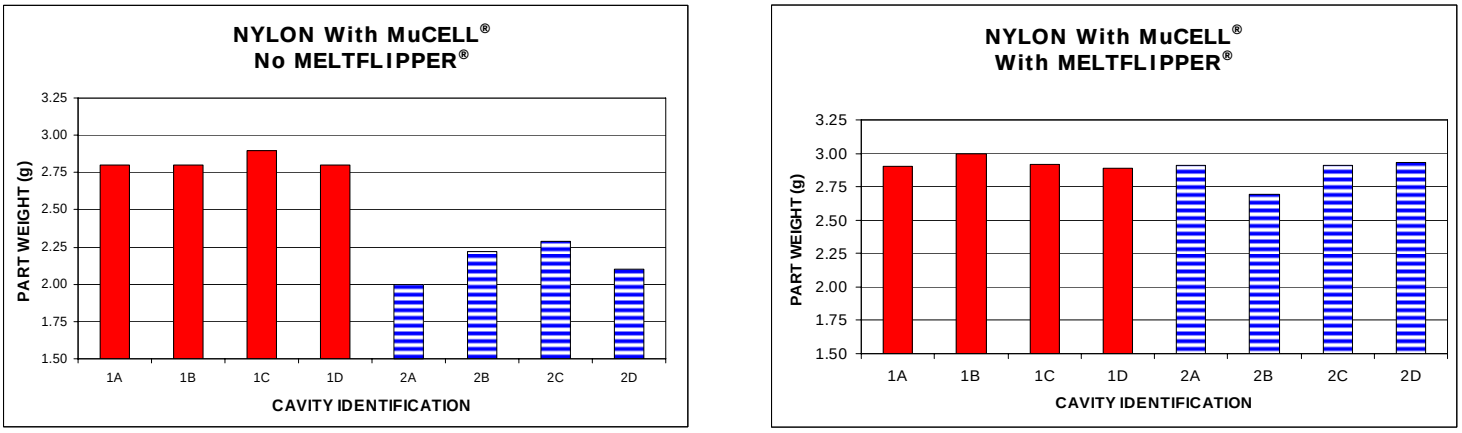

Figure 1: Left-Imbalance results of the 8-cavity mold using MuCell technology without MeltFlipper technology (23.9% imbalance).
Right-Imbalance results of the 8-cavity mold using MuCell technology with MeltFlipper technology (2.6% imbalance).

Laboratory testing demonstrates that using the MeltFlipper technology in conjunction with the MuCell process in geometrically balanced, multi-cavity molds dramatically reduces the shear-induced imbalance. As a result, cavity-to-cavity part weight variations are virtually eliminated and the overall part consistency and quality are significantly improved. Short shots molded from nylon showed that the part weight difference dropped from 23.9% down to 2.6% percent with use of the MeltFlipper technology. While analyzing full-shots, the traditional geometrically balanced runner experienced a 9.7 percent imbalance. By introducing the MeltFlipper technology into the mold, the imbalance was cut to only 0.6 percent - yielding a significant 96.6 percent improvement to part-to-part consistency.

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"The two technologies seem to be a perfect marriage because each enhances the abilities of the other to further reduce part cost while improving quality" says John Beaumont, president of Beaumont Technologies, Inc. "The combination of the MuCell process and BTI's MeltFlipper technology gives molders a significant advantage in the marketplace," adds David Bernstein, president and CEO of Trexel. "By producing better parts at a lower cost, molders can expand their markets while increasing their profits." Trexel now recommends that its clients add MeltFlipper technologies to their MuCell microcellular process molds.