

DESIGN WITHOUT LIMITS

Optimize productivity and capability by designing and building molds uniquely enabled by iMFLUX Process Control.

iMFLUX is often asked “how do we design for iMFLUX?” Just like conventional mold building, there are key process attributes that designers design around i.e. fill rates, fill pressures, tonnage, weld line locations, volumetric shrinkage, sink marks, shear rates, etc. Often these attributes are estimated from software simulations and iMFLUX is no different.

Benefits

While the iMFLUX process brings numerous benefits to a mold already in production like resin savings, additional resin options, faster cycle times, less stress on the mold better cosmetics, less warpage, and/ or reduced energy costs. DWL can bring additional benefits or further enhance the benefits seen with the iMFLUX process alone. The additional benefits of designing with DWL at the start of your next project could include up cavitation, reduced press size, reduced resin waste and gate location flexibility. These benefits effectively translate into higher quality parts, reduced capital costs, and reduced part costs.

Key differences

Runner & Gate design:

Use iMFLUX’s slower fill rates when designing your hot runners, cold runners, and gate sizes. Slower fill means lower shear and therefore smaller runners and gates are required to target the same shear rates. If using a third-party hot runner supplier, be sure to supply your estimated iMFLUX fill time. Slower fill rates and lower pressure may get you into your hot runner supplier’s smaller drop size freeing up space for better cooling and or steel condition.

Gating Strategy:

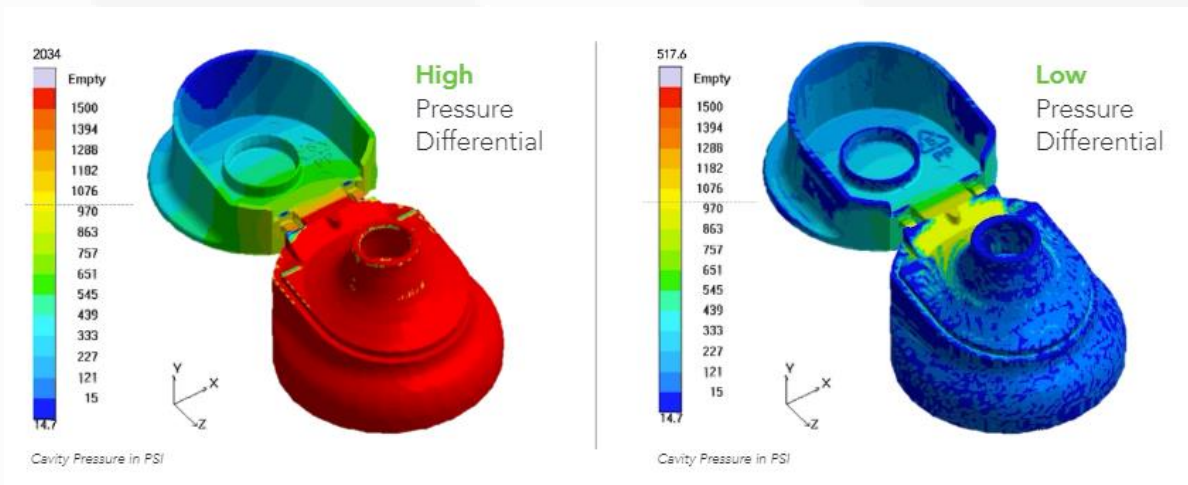
The iMFLUX process enables filling larger L/T ratios at lower pressures and tends to have a higher resin density as it fills. This does two things; One, it allows for greater distances between gates or even elimination of gates all together for parts requiring multiple gates. And Two, it allows the gate to be located in a position that may not otherwise have been considered.

Lower Cavity Pressure:

iMFLUX significantly reduces both peak injection pressure and cavity pressure. This benefit can be leveraged in several ways - increased cavitation, lower tonnage press, higher mold life, lower melt temps, part light weighting, lower MFI resins, etc.

Shrinkage:

Similar to conventional mold design, iMFLUX uses the resin manufacturer's recommended shrink rate when adding shrinkage. We have found that the shrinkage across the part tends to be more uniform with iMFLUX than with a conventional process. However, to maximize the benefits of iMFLUX its best to groom your critical features to an optimized iMFLUX process versus trying to optimize the iMFLUX process around finalized steel sizes.



Simulation

The iMFLUX process can be simulated in both Autodesk's Moldflow and Moldex3D's simulation software. iMFLUX has partnered with Moldex3D to develop a built-in module to help standardize iMFLUX simulation procedure. Once trained in either software package, a simulation engineer should be able to provide not only a report on iMFLUX but a comparison of the iMFLUX process to a conventional process. The part designer and/or mold designer can then optimize their respective design to the iMFLUX process.

For support on your next DWL project connect with our applications and simulation team. Our team of iMFLUX experts can assist on you on designing your next part and or mold.

See our website imflux.com or contact us at
3550 Symmes Rd, Hamilton Ohio 45015
Email: info@imflux.com
Phone: (513) 488-1017