

# FLOW FACTOR

EDUCATING PLASTICS PROFESSIONALS

## Our Capabilities Predict | Identify | Solve



**Focus on design to reduce costs.** In-depth part feasibility can eliminate many manufacturing problems prior to Moldflow analysis. Wall stock check, draft analysis, tooling action are among the results provided.



**Not concerned with cycle times or warpage?** Perfect for prototype tooling sources and product designers who require gate sizing, weld line locations, and clamp tonnage results within days, not weeks! Simply send part data, material info and let us do the rest!



**Evaluate your part design and eliminate risk.** The Silver level adds Isothermal Warpage analysis to the Bronze level. Save time & money by having CAE Services evaluate your part design prior to sourcing your mold builder. Our staff will recommend part design improvements to widen your processing window and avoid surprises during mold sampling. Cooling and warpage analysis is available at the Gold Level.



**Cycle time, warpage or tight tolerance concerns?** Our Gold Level adds cooling and warpage analysis. Ensuring an efficient and uniform cooling design is the goal so that cycle times are optimized, and warpage issues are identified, tooling recommendation are included at no charge. For glass filled materials or tight tolerance concerns ask about our morphing and windage capabilities.

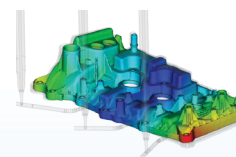
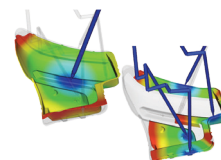
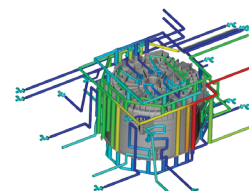
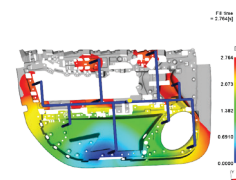
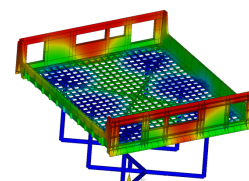


### GM STI

CAE Services has been an authorized GM STI Moldflow provider since 2007. We thoroughly understand the 16355 process and the 16365 try out protocol. Validation and sampling support is available.



**Specialty Services**, includes Gas Assist, Injection/Compression, Encapsulation, Co-Injection, 2/3 Shot, Structural Foam and MuCell. If you have a challenging application or require an experienced team of Expert Certified Moldflow analysts please contact us.






**Moldflow Analysis Experts since 1988**

(630)761-9898

[www.caeservices.com](http://www.caeservices.com)

# Analysis Deliverables

		 Bronze	 Silver	 Gold
F L O W	Gate size & location	◆	■	+
	Gate freeze time (gate sizing)	◆	■	+
	Optimized gating	◆	■	+
	Fill time & pattern	◆	■	+
	Weld/meld lines, air traps	◆	■	+
	Pressure to fill	◆	■	+
	Cold runner sizing & balancing	◆	■	+
	Hot runner & bore sizing	◆	■	+
	Sequential valve-gating (SVG)	◆	■	+
	Variable valve-pin speed (SoftGate, SynFlow, FLEXflow)	◆	■	+
	Shear rate & shear stress	◆	■	+
	Fiber orientation	◆	■	+
	Core Shift	Optional	Optional	Optional
P A C K	Packing pressure profile (shrinkage uniformity)	◆	■	+
	Volumetric shrinkage	◆	■	+
	Sink mark depth	◆	■	+
	Clamp force recommendation		■	+
W A R P	Isothermal warpage (no cooling effects)		■	+
	Predict warpage magnitude & direction		■	+
	Determine primary cause of warpage		■	+
	Part design recommendations to reduce warpage		■	+
	Warpage w/ cooling effects			+
C O O L	Cavity & Core surface temperature differential			+
	Optimize cycle time			+
	Cooling design evaluation			+
	Coolant temperature rise (circuiting analysis)			+
	Ensure turbulent flow rates (GPM)			+
	Evaluate cooling process settings			+
	Evaluate various steel types & cooling inserts			+
W I N D A G E	Initial warpage will be reverse-biased			Optional
	Determine windage shape & scale factor			Optional
	Provide morphed CAD model for tooling, stitched & draft-corrected			Optional
	Keep morphed features out of die lock condition			Optional

Analysis deliverables are subject to change

## Specialty Analyses

- Co-Injection
- Compression
- Conformal Cooling
- Gas Assist
- Injection/Compression
- MuCell
- Multi-Shot & Overmold
- Structural Foam
- Thermoset

## Available Services

- Part Feasibility (DFM)
- Sampling Support

## Reports

Online meetings will be conducted as needed throughout the course of a project to review results. Preliminary reports will be issued (if needed) to communicate pertinent information about gating recommendations once they have been determined (PPT & MFR formats). Final reports will be issued at the conclusion of all simulation work (PPT & MFR formats).

## CAE Services Corporation

Chicago • Grand Rapids • Rochester Hills • Windsor

[www.caeservices.com](http://www.caeservices.com)

(630) 761-9898

