In this issue:

O! Member Update

April / May 2001

Dear Fellow Members,

The April/May issue of O! Member Update is packed with information that you are sure to find interesting. *Get ready for the AGM* with Tim's message or take a quick trip to paradise with *Martin Clarke's* "Design Postcards". If you're not in the mood to travel outside the province, read about Jason Nip's trip to *The Carleton 2001 Design Conference*.

Carleton Alumni should be particularly interested in this year's ACIDO AGM since Prof. Willem Gilles will be inducted into the ACIDO Hall of Fame. You can read about how you can participate in the "Newsclippings" section.

In this issue we are introducing two new sections:

1."Success Story" is the first new section. In this issue we feature Davor Grunwald's Sculptra project story. If you have a success story of your own, you can now share it with your colleagues in this section.

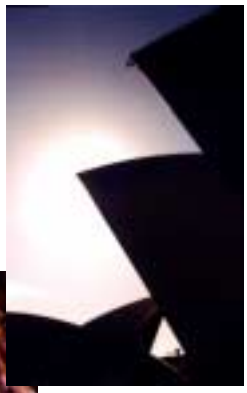
2."Hey Gerry!" is another new section that we've added. I know that everyone has questions about the processes and sources needed to complete projects. In this section Gerry Beekenkamp responds to your questions about new technologies and manufacturing processes. You can send your questions to our communications email: **info@acidontario.org**

I'd like to thank all the members who contributed to this issue. A special thanks goes out to David Valente for his humorous "Hey Gerry!" graphics.

See you at the AGM,

Sayeh D. Beheshti
ACIDO, Communications

ACIDO
Design Exchange
234 Bay St, P.O. Box 18
Toronto, Ontario M5K 1B2
Voice: 416 216 2141
Fax: 416 368 0684
website: www.acidontario.org
contact us: info @acidontario.org



In this issue

ASSOCIATION OF CHARTERED INDUSTRIAL DESIGNERS OF ONTARIO

Get Ready for the AGM!

It's Spring! Time for clichés about growth and rejuvenation with obvious references made to one's favourite extra-curricular activities, which, in the context of this ACIDO Newsletter must mean it's time to review the year's accomplishments and talk up our Annual General Meeting. In the spirit of offering more tangible benefits and better value for fees paid we have planned a pleasant evening featuring a minimum of the required reportage and voting stuff and concentrated on more festive parts for your interest and entertainment.

The AGM is scheduled for May 24th. and will be held in the DX Boardroom, beginning at 6:30pm. As usual, refreshments will be served, and all members are welcome and encouraged to attend. If you cannot attend you are asked to forward the proxy you will be receiving to ACIDO c/o the DX. More specific information will be forthcoming in the days ahead.

"The most important ... piece of business we will attend to is the recognition of the immense contribution to Industrial Design in Canada made by Prof. Wim Gilles... We will honour Prof. Gilles by inducting him into our Hall of Fame"

The most important - and some might say most overdue - piece of business we will attend to is the recognition of the immense contribution to Industrial Design in Canada made by Prof. Wim Gilles, the founder of the School of Industrial Design at Carleton University, a Fellow of ACIDO, and the man responsible for the education of some of Canada's top designers. We will honour Prof. Gilles by inducting him into our Hall of Fame, and look forward to kind words and stories from his former student, co-faculty member and friend, Prof. Martien de Leeuw. Remember to bring clean handkerchiefs to place on your heads.

We have also invited Miles Keller to come and talk to us about his experiences over the past year designing a new and notable ergonomic office chair for All-Seating. Although not scheduled for production until later this summer, Miles will be bringing various prototype parts and developmental models in to illustrate his process with candor and humour.

Martin Clarke, who spearheaded ITW Plastiglide's developmental involvement with the project will also give us his insights into the work involved. A huge job, and a great achievement which explains why Miles has been so hard to find for the past year.

As a special treat, All-Seating have agreed to donate one of the first production examples of the chair to ACIDO, and it will be raffled off to one of our members. Each member in good standing (ie. dues paid in full by the date of the AGM) will automatically receive one raffle ticket at no additional charge. Attendance at the AGM is not a prerequisite to winning, but extra tickets will be available to be purchased at the AGM (or in advance via email - more to come on that so watch your inbox) for a price of $25.00 each. You can increase you odds by buying another ticket (proceeds will go to funding ACIDO activities) but you can't play if you haven't paid your dues. Our group is rather small, so you can imagine the odds of winning one of these wonderful chairs.

In addition to the necessary reporting on the year's activities, we will let you know our plans for the upcoming year. Some of our plans (and the concurrent plans of ACID, ADIQ and BCID) require subtle changes to our By-Laws, so you will be asked to review (in advance) and then ratify new By-Laws at the AGM. We will outline the changes and the reasons for them well in advance so there will be no surprises. Virtually all of these plans have been conceived as ways to improve the provision of services and benefits to you, the members of ACIDO, and to bring in new blood and fresh faces. With a bit of luck and your support, the achievements of the past year will become recognised as the foundation of a new and vibrant Association, and maybe we will grow into the profession we've always wanted. I know that sounds like a cliché, but I did warn you, didn't I?

-Tim Poupore, President, ACIDO

ASSOCIATION OF CHARTERED INDUSTRIAL DESIGNERS OF ONTARIO

Prof. Wim Gilles to be inducted into Hall of Fame at 2001 ACIDO Annual General Meeting (AGM).

The ACIDO AGM is scheduled for May 24th, 2001 beginning at 6:30pm and will be held in the DX Boardroom.

This year, Prof. Wim Gilles will be inducted into the ACIDO Hall of fame. As the founder of the School of Industrial Design at Carleton University, He has been responsible for the education of some of Canada's top designers.
In an effort to recognize Prof. Gilles' lasting impact on the Canadian Industrial Design community, ACIDO is preparing an exhibition of pictures and thoughts.

If you have a picture or story that you would like to include in this exhibition, please contact us :
info@acidontario.org

Baby Mobile Wins Design Competition

The Design Exchange hosted the "create>what's>next"™ Design Competition Award Show on March 28, 2001. It was sponsored by Alias|Wavefront™ and IBM®. All ACIDO members were invited to attend the award show which was followed by a reception.

Chicago-based industrial designer Aaron DeJule's won the First Prize. DeJule's baby mobile uses organic electronic displays to monitor a child's movements and respond with corresponding mobile activity. The mobile would display images on screen-like wings, changing from black and white still images to full-motion color video as the infant develops.

The competition recognized three other winners.
Dong Min Lee, an industrial design graduate student at the Cranbrook Academy of Art in Bloomfield Hills, Mich., won the second prize for "Lullu," a purse-shaped computer that would contain computational jewelry and programmable beads.
Casey Wright, a product visualization specialist at Lunar Design in Palo Alto, Calif., along with team members Tad Toulis, Pierre-Yves DuBois, Flo Bautista, and Andrew Zee, won the third prize for "BLU," an exploration of new combinations of clothing, flexible displays, and wireless networking technologies.
Tim Sharpe, an industrial designer in San Francisco, Calif., won a honorable mention for "My.D," a personalized, universal security key for Internet transactions and electronic data transfers.

ToolToys Exhibition in Copenhagen

If you are planning to visit Denmark by June 10, 2001, you might want to check out the Danish Design Centre's latest exhbition : ***ToolToys - Tools with an Element of Play***. The exhibition was inspired by the concept of ToolToys, introduced by Toronto Industrial Designer Alexander Manu in his book of the same title, first published in Denmark in 1995.

The purpose of a tooltoy is to fulfill practical and emotional needs. It is created based on a product philosophy which contains logic and creativity. Traditionally opposed ideas such as reason and passion, intellect and emotion can supplement and cross-fertilize each other - and thereby be united within the product. Tooltoys communicate with us and question our values, they invite us to play, to experience and search for adventure.

The exhibition contains about 150 products from over 60 companies worldwide. The exhibition is open to the public until 10 June, 2001
For more information you can check out:
http://www.ddc.dk/UK/DDC_udstillinger/udstillinger/toolToys/tooltoysUK.html

Remembering Morison Cousins (1935-2001)

Morison Stuart Cousins was born in Brooklyn in 1935. He got the idea of becoming an industrial designer by admiring pictures in Fortune magazine. He studied Industrial Design at Pratt Instiiute. Morison along with his brother Michael, formed Cousins Design in 1963 in New York. In 1970 they designed the Dixie Cup dispenser, of which the American Can Co sold more than 100 million. In 1984 The American Academy in Rome awarded Morison a Rome Prize to study design.

In 1990 Tupperware turned to Morison to spiff up products whose look had grown a little stale. As vice-president of design for the Tupperware Corp, Morison brought immediate flair to Tupperware, without sacrificing its polyethylene American soul.

The items he designed combined bold, geometric, milk-white bases with sleek but soft touches and splashier colours. He replaced the narrow lip seals on tupperware with larger seal tabs and double-arc handles that were easier to grasp for the elderly. Strong colour contrast between lids and bowls increased usability for people with limited vision. His design team ventured beyond bowls to vegetable peelers, spoon rests, refrigerator magnets and toys.

More than two dozen of his designs for Tupperware and others have been acquired by museums in New York, London, Munich and elsewhere. He is survived by his fiancee, Kimberly, two daughters, Michele and Elizabeth, and a brother, Michael.

ASSOCIATION OF CHARTERED INDUSTRIAL DESIGNERS OF ONTARIO

Every year Carleton University Hosts an Industrial Design Seminar. This year's seminar took place January 10-12.

The Carleton 2001 Design Conference

A Humber students perspective by: Jason Nip

The journey to Carleton was a seven-hour drive from Toronto, which began for us, at four o'clock one Thursday morning. Five of us , from Humber, arrived in Ottawa to find a campus that was large but none too difficult to navigate. We found the Industrial Design office located in the Mackenzie Building, where Diane Smyth, our contact, lead us into a conference room. A group of fourth year students were already underway with their presentations for an event we had come to know as 'Seminar'.

" The common theme was 'design and community'....Each presentation sparked immediate discussion."

The common theme was ***'design and community'***, with topics ranging from design in the rural community, to globalization. Each presentation sparked immediate discussion. The room consisted of fourth year students, faculty, invited guests, and Carleton alumni; John Tyson of Nortel and Richard Brault of Studio Innova were also present along with some other notable designers.

At lunch, I was lucky enough to find an old friend, who is in her fourth year now at Carleton, and we discussed the differences between our two programs. David Fells, a resident artist and speaker was another familiar face. We had met three years ago through the ski industry; I had done some testing of a prototype ski design that he was responsible for.

After the presentations three students arrived from O.C.A.D and we all went out for drinks. By this time, we had all been up for fourteen hours, but fatigue had yet to set in. We decided that food might help at this point. After dinner, and plenty of food for thought we were all ready for bed. Thankfully some of the Carleton students were kind enough to adopt us for the two nights.

The following day we were split into groups in order to discuss the topics raised the previous day. The groups were made up of people from Carleton, O.C.A.D., and Humber. I chose globalization as a topic and in small groups we began discussing North American branding and it's influence on Asian culture. Topics spread quickly and soon we were all over the map. I guess we were all eager to get to know one another and share our own ideas about design. Perhaps the wide variety of subjects says something about the mysteries that surround the responsibilities of design

Back at the conference, John Tyson spoke about the compression of time, its influence on the life cycle of a product and how it will affect us as designers. Other topics ranged from the idea that community can be created or destroyed through design, the perception that imported products have more value than products designed here, the compressed planning horizon, to how design needs to be enduring as well as endearing.

At the end of the day, we all met at Kamal's for dinner and drinks. Perhaps you can understand if at this point, discussion about design was kept to a minimum. I got another chance to meet and greet more Carleton students. We compared information about projects and practices, finding that although both programs differ in many ways, they lead to a very similar set of values.

Bar 56 was the next stop, and we got a small taste of Ottawa night-life.

On day three, Willem Gilles, the man who founded the program at Carleton, was on hand to speak about the history and origins of Industrial Design as a profession. He took the audience back to the time of Greek architects and moved on to his own life experiences as a designer, long before the term "industrial design" even existed. It was an entertaining look at a history that gave us more ideas about who we are, how things came about, and

" Perhaps the wide variety of subjects says something about the mysteries that surround the responsibilities of design"

where things may lead to in the future.
It was time to leave. We thanked Brian Burns for having us and exchanged email addresses with many of our long-distance peers. I think our involvement at the conference was an important step in sharing both experiences and new ideas with one another. I came away with the sense that there are many more of us out there, harboring many of the same interests, fears and mysteries. It appears as though new sense of community was created,with a mission of sharing the clues we each might hold about a profession which continues to defy explanation.

SCULPTRA Form Story
by Davor Grunwald

In the second semester of my idustrial design study in Vienna, in 1964, Professor Hoffman gave my class an assignment to create a module so that after it was multiplied, could be connected to each other in the "Z" direction. It also couldn't be disassembled in the "X" or "Y" direction. We had a choice of materials and production technologies but had to pay attention to aesthetic values. I assumed that the solution could be found somewhere in the field of math-functions. I soon found out that the sum of two cosine functions creates a surface, which fulfills the conditions of that theoretical assignment. My well-balanced soft module surprised Professor Hoffman and my fellow students. This seemingly simple exercise left a strong impression on me. I discovered in it the basis of my future profession. This abstract module became my motto, symbol, and method of thinking and aproach to industrial design.

This form has been applied as an exclusive ceramic tile (see bar), ceiling and wall acoustical panels, vase, ashtray, etc. so the evolution procedure from a simple abstract idea to useful products, in the span of 35 years, is still going strong. You can find Sculptra products at **www.roodline.com**.

SCULPTRA VASE
One of the many ceramic products which design is based on SCULPTRA SHAPE
Designed by Davor and Vanja Grunwald

SCULPTRA BAR
A streamlined mobile bar is designed as a focal attraction to any executive office, dining area or patio for important business-social functions.
Sculptra bar blends in easily with modern as well with traditional furniture by choosing a colour of custom Sculptra ceramic tiles (optional) at the frot of the unit. The standard charcoal colour goes well with majority of furniture colour schemes.
Sculptra bar i made out of stainless steel, featuring two storage shelves for bottles and glasses, two curved sides (half cylinders) and a sturdy countertop.
The Sculptra bar is equipped with four heavy-duty casters for easy placement in desired location.

Postcards From Paradise

by Martin Clarke

These photos were taken by my wife, Jane Curry and I on a trip to Australia and Papua New Guinea in January of 2001. This was our second visit to Australia, visiting the city of Geelong in Victoria, and Sydney in New South Wales, and our first trip to PNG. Our passion for scuba diving has taken us to many exotic and remote places in the world. We always come home with a greater respect for cultures and how adaptable people are to their environments.

Picture of Jane observing a colony of pink skunk anenome fish on a reef wall in Papua New Guinea.

Percula clownfish. Has a symbiotic relationship with its host anenome.

The chambered nautilus (which we have come to recognize by it's shell structure). this is a living specimen brought up from the depths so that divers can interact with it before it is released back to the deep. It is a carnivorous mollusk that stalks its prey, usually small fish.

Part of a large barrel sponge with two colourful Crinoids attached and wrasse swimming in front.

This young fellow is dressed in ceremonial garb. Taken in Boga Boga village, where villagers rescued a crew from the B17F bomber, "Black Jack" in WWII.

Epicentre - A new restaurant in Geelong made from straw bales. A stucco finish gives it an adobe look. We also encountered a house being constructed from this material.

Dear Readers,
Our recent survey showed that many of our members are looking for a source to turn to with their questions about manufacturing processes, innovations and even local resources. Those of you whom have had the pleasure of listening to one of Gerry's Lectures, will know why he was the obvious choice for this new Q & A column.

If you have a question about a manufacturing process or method, you can email it to : **info@acidontario.org**

Hey Gerry!
I'm an industrial designer whose focus is primarily injection-moulded plastic parts. Lately however, I have been seeing a trend towards "Thixomolded" parts as an alternative to thin-wall injection moulded plastic parts. Notably, there are some parts on my laptop and cell phone that were moulded this way.

I know that Thixomolding combines metal-casting and injection moulding technologies to produce metal alloy parts but beyond that I do not know much about the specifics of the process or what the primary advantages of this process are. I expect EMI shielding would be one benefit of an metal alloy part. I'm sure there are others.
Maybe you could tell me a little more about the relative merits of Thixomolding. Is tooling comparatively priced? Are parts cost-comparable to injection moulding?
Thanks, Gerry!

Scott Grant
HWD Ltd.

Dear Scott,

This article on Thixomolding™, courtesy of Mr. Flavio Cella at Husky, says it better than I can and first appeared in Plastics Technology magazine in April, 1998. It is reprinted with the author's permission.

Thixomolding Contacts:
• Thixomat Inc., Ann Arbor, Michigan, is the developer of Thixomolding. More information and images exists on their web site at www.thixomat.com
• Canadian Thixomolding contacts include:

Thixotech
Suite 15, 1305
33rd. Street, NE
Calgary, AL
T2A 5P1
Tel.: 403-221-0535
Fax.: 403-569-0072

Husky Injection Molding Systems Inc.
500 Queen St. South
Bolton, ON
L7E 5S5
Tel.: 905-951-5000
Fax.: 905-951-5384
www.husky.on.ca

Well, Scott, I hope that helps. Best of luck!

Regards,
Gerry Beekenkamp

Is Metal Molding in your Future?

by Tim Creasy, Husky Injection Molding Systems Ltd.

Thixomolding is the high-speed injection moulding of thixotropic metal alloys like magnesium, zinc or aluminum. Like plastics, they become more liquid when disturbed (sheared) by shaking or stirring. This process has a lot in common with standard injection moulding - even more than it does with the standard die-casting process for making metal parts.

Thixomolding is the trade name for a process patented by Thixomat Inc. of Ann Arbor, Mich. Husky Injection Molding Systems is licensed to be the exclusive builder of Thixomolding machines in North America, South America and Europe. But why talk about a metal-molding process to plastics processors? Haven't plastics been hugely successful in replacing die-cast metals? The answer is yes, but now some of the business is going back the other way.

Consider some familiar, high-value parts such as laptop computer housings, cellular phone components and other consumer electronics parts that have recently converted from plastic to metal. A variety of automotive interior parts, plumbing fixtures, hardware and medical parts are not far behind. For molders who have an interest in these types of applications, Thixomolding may in the future be one of the molding skills needed to serve a customer base that demands both plastic and metal.

What's immediately noticeable about Thixomolding is the design flexibility it can offer. The process allows magnesium parts to be produced as thin as 0.025 in. (0.6 mm) and as thick as 0.75 in. (20 mm). And Thixomolding can impart details that would not be possible in die-cast or plastic parts. For example, holes with zero draft angle have been used in mass-production by Thixomolding.

Unlike die-casting, which isn't known for its worker-friendly operating environment, Thixomolding involves no melting pot or transfer of molten metal. Instead, the Thixomolding alloy partially melts by the time it reaches the barrel's halfway point.

For experienced molders, the transition to Thixomolding should be easy, since the machines look and operate just like traditional plastic molding machines. Here's a look at what plastic molders should know about the process, the machinery and tooling needed to be successful at Thixomolding.

How It Works.
Thixomolding begins as room temperature metal-alloy chips or pellets are fed into the molding machine barrel. The feed-throat area is blanketed with a small amount of Argon gas (20 to 100 litres per hour) to keep air out of the barrel and protect the magnesium alloy from high-temperature oxidation.

As the screw carries the material forward, the magnesium alloy chips are heated to a temperature of about 560 - 590 C (1040 - 1095 F). The combination of the heat and the shearing action of the screw transforms the metal chips into a semi-solid slurry, consisting of spherical solid particles suspended in a liquid-metal matrix. Unlike polymer processing, there is very little shear heat generated by the action of the screw. Instead, the barrel heater bands supply most of the energy for the process.

The semi-solid metal collects in the accumulation zone of the barrel, in front of either a ball-type or shifting-ring non-return valve. The metal is prevented from drooling into the mold by a frozen plug of magnesium formed at the tip of the machine nozzle at the end of each cycle.

continued on page 8....

....continued from page 7

At the start of injection, the frozen plug is blown out of the nozzle into a plug trap in the mold and the metal is injected into the cavities, which are heated to 200 - 250 C (390 - 450 F). To ease filling in tough applications, a vacuum can be drawn on the cavity prior to injection.

After injection, the part is cooled and removed from the machine. A mold-release agent is sprayed onto the mold before each cycle to prevent the alloy from sticking to the surface of the mold. Cycle time varies with the thickness of the part and also of the runner and sprue system necessary to fill out the part. Typical production cycles range from 15 to 60 seconds.

Finally, the part is allowed to air cool and the gates and runners are trimmed off in a mechanical trim press. Further deflashing may be necessary, depending on the application and the quality of the tooling.

A Mostly Familiar Machine

While Thixomolding machines look and act like the plastic injection molding machines they are derived from, there are a few significant differences on the injection end. For one thing, the process needs and ultra-high-speed injection unit with a maximum linear piston velocity around 3.8 meters/sec. The injector unit also requires a refractory metal barrel liner for corrosion and wear protection. The screw is typically of high-temperature tool steel, as are the non-return valve and nozzle.

Other equipment differences include optimized software for injection and temperature control, an integrated argon-gas shield system, and increased machine guarding for safety and cleanliness. Thixomolding needs a clamp capacity of about 5 tons/sq. in. of projected part area. Injection units must be sized to ensure sufficient injection capacity - runner and sprue material included - and sufficient delivery speed (g/sec.).

Why Magnesium?

Right now, only magnesium alloys are thixomolded commercially, though zinc trials are proceeding well, and aluminum alloys suitable for Thixomolding are expected to be commercially viable in less than three years. Regardless of the availability of other alloys, magnesium has several mechanical and physical property advantages over engineering resins, steel and other alloys.

• **It's lightweight**. Magnesium is 30% lighter than aluminum and 75% lighter than steel, making it an ideal material for automotive, electronic and telecommunications applications.

• **It's stiff**. Magnesium's stiffness is considerably higher than engineering resins. Parts with very thin walls that could not provide sufficient stiffness and strength if made of plastic become viable at the same or lower thickness in magnesium. For example, magnesium alloy AZ91D has a modulus of elasticity around 6.53 million psi, as compared with typical values of 435,000 to 1.16 million psi for engineering resins, even glass-filled types.

• **It's conductive**. One of the most critical requirements for an electronic device enclosure is the ability to act as a shield against electromagnetic and radio-frequency interference (EMI/RFI). Most metals are inherently conductive and therefore reflect and absorb EMI. Plastics, being insulators, are transparent to electromagnetic radiation and must rely on surface treatments or conductive fillers to satisfy shielding requirements. Both plating and conductive fillers for plastic parts increase the cost of the part significantly and prevent them from being easily recycled. Magnesium alloys are particularly suitable for EMI/RFI shielding, providing parts with superior levels of shielding that are stiffer, stronger and fully recyclable than comparable plastic parts.

• **It manages heat**. For many consumer-electronic products, the ability to dissipate heat is critical. A good example is notebook computers. As processor speed increases and enclosure size decreases, the operating temperature inside the laptop enclosure can create reliability problems for the electronics. The use of magnesium allows designers to create enclosures that act as heat sinks to remove excess heat. Thixomolding further improves the heat transfer capability of metal by producing more intricate parts with thin heat-sink fins.

• **It dampens vibration**. Vibrations in a system are either transferred to other components, which can affect their durability, or into the air as sound, which can create excessive noise. Magnesium has the ability to absorb these vibrations and dissipate the energy as heat. Thus, magnesium can improve durability in electronic applications subjected to vibration or decrease the noise, vibration and harshness (NVH) in automotive applications.

Mold Design

Thixomolding tooling reflects technology from both plastics molding and die-casting. The high temperatures and corrosive nature of the molten metals require tool steels typical in die casting, while overall tool design should be as close to plastic tools as possible. In general, Thixomolding tools are like molds for technical thin-wall parts of engineering resin - ie. parts less than 1 mm thick. These molds have stiffer supports to reduce flexing, plus large and numerous ejector pins to ease ejection and prevent part damage. There is also no looping of oil lines through the tool so as to provide a consistent and repeatable operating temperature.

Venting of Thixomolding tools is more critical than with plastics molds, and vents should be designed to existing die-casting standards. Adding vacuum draw on the tool can improve filling and reduce porosity of the metal parts.

Mold components that contact the molten metal should be constructed from hot-worked tool steels such as H-11 or H-13 types. H-13 tool steel, which includes 1% vanadium, helps prevent erosion of the gate area. Cavities should be hardened to about 44-46 Rockwell C. Cores and slides should be made harder than the cavity steel. They are generally constructed from H-11, 12, or 13 steel or AISI 440A alloys. Nitriding should be considered for areas of sliding contact. SAE 4140 is recommended for holder blocks, as it will hold its shape better in the higher temperature service.

One of the main benefits of Thixomolding is the laminar flow of the material into the mold (In die-casting the completely molten metal atomizes as it enters the cavity which entraps air and creates internal porosity). Therefore, Thixomold gates should be designed to inject as fast as possible while still maintaining laminar flow. Recommended gate velocities are 15 to 45 meters/sec. When adjusting a new tool, the gate is typically opened up until the die will fill out properly with acceptable internal part quality.

Runners should be made as short as possible to maximize material utilization and minimize flow lengths. Edge or fan gates are common in Thixomolding and are typically trimmed off in a mechanical press. Molds have been build with submarine gates that automatically degate as the tool opens, and there have been suggestions that three-plate molds could be used to strip off the runner and sprue.

Mold temperatures for thixomolded magnesium alloys are similar to those temperatures used in die-casting (200 - 250 C or 390 - 480 F). Hot-oil mold temperature controllers are being used to achieve this operating temperature, although electric cartridge heaters are another option.