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**Elastomer Technologies, Inc. Part Analysis & Quoting Guidelines**

Elastomer Technologies, Inc. has been molding complex and simple rubber parts using compression molding of rubber and liquid injection molding of silicone processes for decades. They have always been a willing customer partner and can be counted on to give an honest and helpful assessment of requirements. What follows is an outline that provides some insights into how ETI approaches a new project or transfer project. Most of it applies to molding projects, but they ask similar questions as we seek information on die-cutting and converting projects.

## Customer Goals & Part Requirements

Any project starts with a conversation allowing ETI to outline a customer’s goals. ETI’s work is to find a method to meet an objective. Starting this conversation usually involves some questions. Customers may have a particular approach that they would like to pursue and have already provided detailed information. More often they are looking for advice and may not have answers to every question. In either case ETI’s goal is to provide what they can to help, subject to a delivery, quality and cost requirement. Some of that information can be extracted from dimensioned drawings, sketches, 3D electronic part designs, photos, prototypes, sample parts or other data.

That shared information on the goal and the part requirement determines the next questions. In order to make a quotation or estimate as accurate as possible it depends on defining as many particular requirements as possible.

Knowing the number of parts a customer wants to produce is important to determine an appropriate process. For instance ETI typically would not quote a liquid injection molding process to make a few parts. We would offer an alternative and might outline the potential trade-off.

ETI then directs our analysis to the part design information provided and presents an analysis of the details and why these details are important to note. At the same time, the conversation outlines missing information that will need to be provided and design changes that may need to be incorporated. Some of the information you may discuss during information exchanges with ETI follows.

* Available processes to make the part for the quantity needed by the customer.
* Part thickness and its influence on cycle time and cost.
* Variable part geometry and its contribution to filling a mold with material.
* Potential flash points in relation to a customer’s gate and parting line requirements.
* Gate and parting line requirements that dictate how a mold is built and impact on cost.
* Possible part removal challenges based on design geometry.
* Difficult to mold geometry formed by blind mold pockets that trap air.
* Parts with geometric features or material volume that may prohibit use of available equipment.
* Surface area of some parts may place it outside the capabilities of a molding press to make an acceptable quality of part.
* Designs may add cost due to added machine software and mechanical changes to machines to run a part.
* Requirements in the design that directly influence tooling cost and delivery.
* Part material consideration is very important to assess for performance, cost, availability, minimum order requirements, shelf life and it is very important to specify any expectation on certification of raw material by formulation, compound or batch.

## Cost & Delivery Information

Many customers call ETI seeking cost and delivery information while building or assessing a project budget. ETI understands that this is very important before moving forward. Some of the factors to consider outside part cost and delivery follow.

* Parts and process development cost. It may be necessary to create prototype parts or build production prototype tooling and test it prior to building full production molds and parts.
* There may be necessary part design changes for manufacturability that are costly in time or tooling.
* If the request is to transfer a mold the size, weight and type of mold would be important to discuss.
* Material cost and availability.
* Material testing requirements.
* Material, process and tooling used to create a part may require secondary operations or outside services to make acceptable parts which could include nitrogen de-flashing, post curing, pad printing, part or tool coatings and mold texturing.
* Packaging requirements.
* Labor and assembly cost.

When information is missing or designs are incomplete, ETI can often provide an informal estimate of parts cost based upon some hypothetical information. This rough estimate based on incomplete design, possible part weight, cycle time, molding process and hypothetical material cost is especially helpful in assessing comparisons to off-shore cost or building some cost into a budget or presentation.

All of the information outlined is helpful in assessing tool transfers to ETI. ETI welcomes this discussion, however we always recommend that customers identify, think carefully about, and discuss any risk factors. There is often an issue with quality, price or delivery driving the decision to move a mold to a new supplier and the ETI team will do our very best to take as much risk out of the equation as possible. ETI is happy to discuss anything driving the need to move the mold and advise a solution.

## Information Regarding Transfer Molding Projects

At ETI, we have a specific protocol for handling transfer molding projects. We are happy to estimate a part’s cost prior to a mold transfer or try to back into an established part price.

* Tool of appropriate size is transferred to us and inspected for any apparent visible damage.
* If the tool needs additional hardware to run it is quoted.
* If the tool requires additional process control on the molding press it is quoted.
* If the part requires any secondary operations the hardware automation etc. needed to do that is quoted.
* They set up the mold and run it with the customer’s material of choice.  The cost is a minimum per day charge plus the cost of material.
* Once a working process is established then the parts are quoted based upon the cycle time, material, press rate and if needed, operator/labor cost.
* Secondary operations such as slitting, post cure, and nitrogen de-flashing are quoted as separate charges.

## Reliable Support at ETI

ETI has been proactive in working with customers on projects for decades. We have a fairly deep understanding of what makes a successful project and while not every project fits within the range of processes and equipment we offer, we are always ready and willing to lend advice and support to get the customer where they need to be.