

## Mold Validation Services

### Why Validate a Mold?

- ▶ Putting a new mold into production can sometimes be challenging. Simply accepting a mold from a tool maker without a validation process can lead to costly quality and production issues.
- ▶ The validation process can verify that the mold and process are capable of repeatedly producing quality components.
- ▶ In this process, a strategic data driven process is used to develop a robust molding process. At this point, the parts are assessed to ensure all fit, form, and function criteria have been achieved.
- ▶ If parts meet quality criteria, the mold can now go into production, or further process development can continue to determine high and low settings.
- ▶ If parts do not meet the quality criteria, the root cause must be determined. This may lead to process adjustments or alterations to the mold.
- ▶ The process would then be repeated to ensure the changes were successful. This process essentially involves effort and resources at the beginning of the process, so that you save significant time, money, and resources in the long run.

### Contact us today to see:

- ✔ A decrease in cycle time
- ✔ A reduced scrap rate
- ✔ An increase in production
- ✔ An increase in customer satisfaction



## About ZAG

Founded in 2004, ZAG is a leading supplier of high-quality plastics manufacturing equipment and technical services. Our talented team delivers manufacturing solutions improving our customers' profitability and success.

## Mold Validation Services How ZAG Can Help

### PDB - Process Documentation Booklet

➤ A booklet that documents the equipment and process used to create a part that meets the parts quality criteria.

### Process Development I

➤ A package that Includes a fill-time study, hold-pressure study, cavity imbalance, and process setup sheet based on scientific molding principles.

### Process Development II

➤ A package that Includes a back-pressure study, recovery-time study, fill-flow study, hold-pressure study, hold-time study, cavity imbalance, HDT cooling-time study, process setup sheet based on scientific molding principles.

### IQ - Process Documentation Booklet

➤ A booklet that verifies that the mold, machine, and ancillary equipment will be capable of producing the part. The IQ verifies that the mold will fit within the confines of the tie bars and platens. The press will also generate enough tonnage, opening and ejection stroke to produce a complete part. The injection unit can generate enough pressure, flow rate, and shot capacity to produce a full and complete part. Note that the IQ does not verify that the press will create a part that meets all quality criteria. This is a function of the part design, mold design, press capability, material, and process.

### Screening DOE - Design of Experiments

➤ A design based on process development that creates highs and lows for the key process input variables. The DOE is meant to establish high and low process parameters that allow for the production of parts that meet acceptable quality criteria.

### Optimization DOE - Second Level Design of Experiments

➤ Information obtained in the screening DOE is used to tighten the process parameters that will be executed in the OQ.

### OQ - Operational Qualification

➤ A stage of the process that tests the high and low limits of the process that were established during the DOE. Typically, the process will run at a determined amount of time at both the high and low settings. This verifies that quality criteria are met at both the high and low process settings.

### PQ - Performance Qualification

➤ A stage of the process that verifies that the process is capable of producing parts that will meet quality criteria over an extended period, generally 24 hours.

### PDP - Process Development Package

➤ A package that includes Process Development II, Screening and Optimization DOE, IQ, OQ, PQ, and all supporting documentation.

### Project Management

➤ We can handle not only mold validation, but the entire process: from tool build to machine and auxiliary selection, to a validated process. Whether it is a portion of the process or a turnkey solution, we can help.

**Contact ZAG for pricing.**