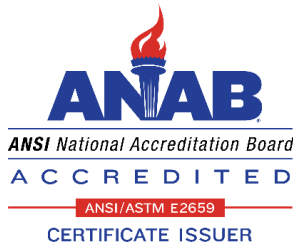




American Injection Molding Institute



Molding 3

Process Engineering

Learning Objectives

1) MOLDING 2 REVIEW

Review the use of the Process Development checklist, Process Development Start-Up checklist, Process Development workbook and instructor specified Best Practices & safeties to safely startup, develop and document a molding process for a given part, molding machine, mold and material.

MOLDING 3 CONTENT

Utilize the Process Development with Simulation checklist, Process Development with Simulation Start-Up checklist, Process Development workbook and student specified Best Practices & Safeties to document and defend the mold process development methodology and documented molding processes.

- 2) Evaluate the influence of the mold design and construction on pressure development and distribution within the cavity, the uniformity and efficiency of removing heat from the molded part, venting air effectively, and ejecting the parts and runners reliably.
- 3) Evaluate plastic material classifications and properties to assess their impact on the molding process and part quality.
- 4) Complete the necessary calculations and conversions to transfer a 2-stage molding process and demonstrate the ability to transfer the molding processes to other machines.
- 5) Apply Flow Grouping Methodology to quantify mold filling balance, identify sources of steel & shear imbalances and recommend corrective actions.

- 6) Test molding machines to quantify machine performance and capabilities. Apply the results of the performed machine tests to molding process development, molding process transfer and molding process best practices & safeties.
- 7) Utilize data acquisition to test molding machines, document (template) the molding process, assist in process transfer and troubleshooting.
- 8) Apply knowledge of the (4) pillars: material, mold design & construction, molding process and part design including the fundamentals of shrink & warp to resolve issues during the process development process.
- 9) Troubleshoot the Process Development Methodology by recognizing errors and/or mistakes and specifying the necessary corrective actions.
- 10) Interpret and apply analysis results for process development & defect root cause / corrective action (fail fast) and differentiate flow simulation capabilities vs. the actual molding process.

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Revision History is available upon request.