MOULD & PART DESIGN CONSIDERATIONS FOR SCIENTIFIC MOULDING

Programme Overview
To provide the participant with a well-rounded understanding of how to design for mouldability.

Duration
5 Hours Pre-requisite Online Training
2 Days Classroom and Practical Training

Who will Benefit?
This training course will benefit anyone involved with mould design, part design, mould trials and product development. Participants will learn a large amount of practical information they will be able to apply directly to their workplace or facility. Even the most advanced engineer will learn new information which they can apply to their facility.

Course Outline

Pre-Requisite Online Training Course Includes:
• Establishing a Scientific Injection Moulding Process
• Mould Design: Injection Mould Fundamentals
• Mould Design: Runners, Filling Software & The Mould Design Process
• Part Design: Product Development & The Prototype Process
• Part Design: Mechanical Behavior of Polymers

Daily Topics Include:
• Scientific Moulding – Scientific Moulding Review
• Scientific Moulding – Scientific Process Considerations
• Scientific Design – Part, Mould, & Process Development
• Scientific Design – Proper Mould Trial Considerations

Specific Topics Covered under Classroom Training Includes:
• Scientific Moulding – 1st Stage Injection Speed
• Scientific Moulding – 1st Stage Injection Transfer
• Scientific Moulding – 2nd Stage Packing Pressure Optimisation
• Scientific Moulding – 2nd Stage Packing Time Optimisation
• Scientific Moulding – 2nd Stage Clamp Force Optimisation
• Scientific Moulding – Process Documentation
• Scientific Design – Initial Part Design Considerations
• Scientific Design – Common Part Design Complications
• Scientific Design – Initial Mould Design Considerations
• Scientific Design – Common Mould Design Complications
• Scientific Design – Practical Part Design Review
• Scientific Design – Practical Mould Design Review
Skills & Learning Objectives Covered:

- Proper development of processing parameters and their importance during mould trials:
  - 1st Stage Filling
  - 1st Stage to 2nd Stage Transfer
  - 2nd Stage Pack
  - Screw Delay
  - Screw Recovery
  - Screw Decompression
  - Cooling Time
  - Mould Opening
  - Part Ejection
  - Mould Closing
  - Clamping

- Basic process development techniques critical to any design evaluations
- The importance of good housekeeping and machine safety
- Understanding the importance of process inputs and outputs
- Scientific Design considerations to help design for processing
- Proper design review techniques are discussed
- The importance of tooling design and specifications are discussed

- Part & Mould design considerations include:
  - Material Selection
  - Gating Locations
  - Parting Line Location
  - Simulation Considerations
  - Filling considerations
  - Packing considerations
  - Dimensional considerations
  - Construction techniques
  - Assembly and disassembly concerns