

## INTRODUCTION

Plastic parts are integral to various types of products these days in every perceivable sector. Demand for lighter and robust products has pushed the need for usage of plastics wherever possible. Depending on the plastics material to be used and its field usage, it is important to choose the right moulding process for manufacturing the part in the most efficient and cost effective method.

Out of the various moulding techniques, Injection Moulding is the most widely used for large scale production of high quality plastic parts. Therefore, Injection Mould Design assumes great importance in realizing defect-free parts using various plastic materials in required volumes. Having a defect free mould ensures speed and quality remain constant during manufacturing. In order to make such a mould, it is important to understand the design considerations that a mould engineer encounters during the design process.

Keeping this in view, IMTMA is organizing a 5 day programme on Fundamentals of Injection Mould design.

## FOCUS AREAS

- Introduction to plastic materials
  - Thermoset plastics
  - Thermoplastics
  - Shrinkage calculations
  - Examples of different material applications
- Review of Injection Moulding process
- Design fundamentals of injection moulds
  - Selection of parting surface
  - Materials for mould construction, Core & cavity
  - Guiding elements
  - Ejector system, sprue puller, sprue bush
  - Register ring / locating ring
- Feed system selection
  - Types of runners and gates
- Ejection system selection
  - Types of ejector grids and ejection systems
- Cooling system selection
  - Cooling systems for various parts of moulds
  - Water connections and seals
- Fundamentals of side core and side cavity moulds
  - Design requirements of side core and cavity
  - Methods of actuation
- Defects and remedies in moulding process
  - Factors influencing defects
  - Types of defects and remedies
- Mould design calculations
  - Tonnage calculation, shrinkage calculation and cycle time for moulding
- Exercise on sample mould design and development
- Demonstration on usage of CAD modeling software for mould design

## KEY TAKE AWAYS

- Understand the different plastic materials and their properties
- Understand the various elements of an injection mould
- Understand the design fundamentals of an injection mould
- Calculate the tonnage, shrinkage calculation and estimate cycle time
- Go through a complete case study on mould design & development

## FEE PER PARTICIPANT (PER LOGIN)

**Rs. 9000/-**  
+18% GST  
**IMTMA Members/ Micro Companies/ Individuals/  
Educational Institutions / Students/ IMTMA Non  
Members/ Others**

**USD 270/-**  
**Overseas Participants**

## FACULTY

The program shall be delivered by **Mr Joseph Abraham**, a professional with more than 38 years of experience in Tool Designing & Manufacturing, Plastic injection Moulding, Training, Quality Management and Product design & Development. He worked as a Vice-Principal with NTT. He has worked as a Tool Room Manager with several organizations such Balda Solutions, Malaysia, BPL Tool room, Bangalore and Tool Product Singapore. He currently provides training and tooling consultancy to several small scale industries.

### For Registration Contact

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