CADIMENSIONS

SOLIDWORKS Plastics

Length: 2 Days

Prerequisite: SOLIDWORS Essentials and a fundamental knowledge of plastic materials, plastic part design, and/or injection mold design.

Description: SOLIDWORKS Plastics teaches you how to use specialized simulation software tools to predict how melted plastic flows during the injection molding process. Predicting how the plastic will flow enables you to predict manufacturing defects such as weld lines, air traps, short shots, and sink marks. By predicting these defects you can change the part or mold geometry, the processing conditions, or the plastic material itself to eliminate or minimize them, saving energy, material, time, and money.

Course Syllabus

Introduction

- About This Course
- Use of Color
- More SOLIDWORKS Training Resources
- Injection Molding
- SOLIDWORKS Plastics

Lesson 1 - Basic Flow Analysis

- Basic Flow Analysis
- Stages in the Process
- Element Types
- Meshing
- The PlasticsManager Tree
- Material
- Injection Location
- Running a Flow Analysis

Lesson 2 - Detecting Short Shots

- Detecting Short Shots
- Stages in the Process
- Fill Settings
- Flow Front Central Temperature
- Design Changes
- Simulations After Design Changes

Lesson 3 - Automation Tools

- Automation Tools
- Stages in the Process
- Duplicate Study
- Copy Settings
- Batch Manager
- Summary and Report

Lesson 4 - Injection Locations and Sink Marks

- Injection Locations and Sink Marks
- Stages in the Process
- Injection Location Rules
- Sink Marks

Lesson 5 - Materials

- Material Properties
- Stages in the Process
- User-Defined Database
- Resin Properties
- Temperature Properties
- Heat Transfer Properties
- Viscosity
- PVT Data
- Mechanical Properties

Lesson 6 - Mesh Manipulation

- Mesh Manipulation
- Stages of the Process
- Local Refinement of Mesh
- Element Issues
- Mesh Editing
- Leader Lines
- Solid Mesh
- Solid Mesh Types

Lesson 7 - Detecting Air Traps

- Detecting Air Traps
- Stages in the Process
- Air Traps
- Venting

Lesson 8 - Gate Blush

- Gate Blush
- Stages in the Process
- Runner Elements

Lesson 9 - Packing and Cooling Times

- Packing and Cooling
- Stages in the Process
- Flow/Pack Switch
- Pack Stage
- Pack Analysis
- Pack Results
- X-Y Plot
- Clipping Plane Mode
- Cooling Times
- Multiple Injection Locations

Lesson 10 - Multiple Cavity Molds

- Multiple Cavity Molds
- Stages in the Process
- Mold Layouts
- Channel Design
- Runner Channel Design
- Clamping Force
- Runner Wizard Channel Design
- Family Mold Layout
- Using Runner-Balancing

Lesson 11 - Symmetry Analysis

- Symmetry Analysis
- Stages in the Process
- Case Study 1: Runner Design
- Case Study 2: Symmetry Face
- Symmetry Face

Lesson 12 - Valve Gates and Hot Runners

- Valve gates and Hot Runners
- Stages in the Process
- Hot Runners
- Valve Gates

Lesson 13 – Reaction Injection Molding

- Reaction Injection Molding
- Stages in the Process

Lesson 14 - Using Inserts

- Using Inserts
- Stages in the Process
- Cavitied and Inserts
- Materials for Inserts

Lesson 15 - Multi Shot Mold

- Multi Shot Mold
- Stages in the Process

Lesson 16 - Gas Assistance Molding

- Gas Assisted Molding
- Stages in the Process
- Gas Assist

Lesson 17 – Cooling Analysis

- Cooling Analysis
- Stages in the Process
- Cooling
- Cooling Channels and Mold Bodies
- Coolant
- Mold
- Cool Settings
- Cool Simulations
- Cool Analysis
- Cool Results
- Baffle
- Bubbler

Lesson 18 - Warpage Analysis

- Warpage Analysis
- Stages in the Process
- Shrinkage
- Warpage
- Warp Settings
- Warp Results
- Reducing and Fixing Warped Parts

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CADIMENSIONS TRAINING CATALOG