Die Design Seminar
Oct 31-Nov 1, 2011
Doubletree Chicago, Wood Dale
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About the Seminar

The seminar presents an intensive introduction to die design for plastic extrusion.
The objectives of this seminar are:

- to teach the basic principles of die design
- to demonstrate the application of these principles to the design of the main types of extrusion dies:
- tubing and pipe dies, wire coating dies, sheet and flat film dies, profile dies, spiral mandrel dies, and coextrusion dies.
- to discuss the design of calibrators

Two recognized experts will be the instructors for the seminar.

What the attendees will learn:

- the flow properties that determine how the material behaves in the die and when it leaves the die
- the various types of extrusion dies used for different products
- materials and coating used for extrusion dies
- simple calculations for die design
- how computer programs can be used to analyze and design extrusion dies
- the advantages and disadvantages of various die geometries, e.g. the conventional pipe die versus the spiral mandrel pipe die
- various die flow problems and how to avoid them

Who should attend:

- Die designers
- Process engineers
- Manufacturing engineers
- Extrusion supervisors
- Technical service personnel

Introduction

- Overview of types of extrusion dies
- Important melt flow properties
- General rules & guidelines
- Complicating factors in die design
  - Extrudate swell
  - Draw down
  - Relaxation
  - Shrinkage

Design of flat & annular dies

- Computer aided die design
- Flat sheet and film dies
  - Fish tail dies
  - Coathanger dies
  - Horseshoe dies
  - Tubing and pipe dies
  - In-line dies
  - Crosshead dies
- Wire coating dies
- Blown film dies
  - Spiral mandrel dies
  - Smooth mandrel dies
  - Pancake dies
- Coextrusion dies
  - Feed block system
  - Multi-manifold system
  - Interfacial problems
  - Troubleshooting extruders

Profile Die Design

- Conceptual design
- Design parameters
- Flow through profile dies
- How to handle swell
- Parabolic flow
- Esthetics of the extruded profile
- Statistics to improve extrusion
- Actual die design and effect of
  - Plastic properties
  - Land length
  - Preland
  - Draw down
  - Die material

Calibrators

Die Design Testimonials

The instructors are very experienced and knowledgeable. The topics are thorough and well organized. I am more prepared for my Die Design Projects. Joe Pingree, Plastics Resources, Inc. 2009

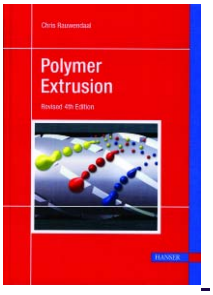
This seminar was an eye opener about why solutions I perform in my dies work. This information will help me plan these things into my dies before I shoot them the first time. Stan Sanders, United Plastics Corporation. 2009

Struggling through our own process for over a year has been highly stressfull, not completely understanding what is happening. This course was an eye opener for what was taken for granted. I have learned a lot and many things to try to alleviate problems upon return to the facility. I feel that we are no longer alone with the contacts that have become available. (Instructors, Facility employees). Carl Sykes, Thordon Bearings. 2009

Chris is a topnotch teacher. He has a knack for bringing a technical subject to a diverse audience. He engaged the students well. Michael Richter, Engineer, WeyerHaeuser March 2005.

After working with dies for 12 years, I found the seminar to be both informative and supportive of technologies I have learned. Chris Rauwendaal is a patient and extremely knowledgeable instructor. Jeffrey Stanley, Process Tech II, Trex Company Inc., March 2005.

Very informative! Chris puts on a very professional seminar. Phillip Jordon, Mfg Engr, Apcom, March 2005



• Different types of calibrators • Friction sizing • External sizing with compressed air • External sizing with vacuum • Internal sizing • Precision extrusion pullforming	**Books authored by Chris Rauwendaal**: • Polymer Extrusion available with registration in any seminar for a discounted price of $100.00 Check appropriate box on registration form. • Understanding Extrusion • Troubleshooting the Extrusion Process • SPC in Injection Molding and Extrusion • Polymer Mixing • Mixing in Polymer Processing