

Troubleshooting Blown Film Extrusion Operations

By: Chris Rauwendaal and Paul Waller

Day 1, Chris Rauwendaal

1. Introduction and extruder hardware

- Basic extruder components
- Review of terminology
- Screw and barrel
- Feed system
- Screw drive
- Heating and cooling
- Instrumentation and control

2. Plastic properties

- What are plastics?
- Plastics used in extrusion
- Melt flow properties
- Thermal properties
- Viscous heat generation
- Plastic quality control

3. What happens inside the extruder?

- Feeding
- Solids conveying
- Plasticating
- Melt conveying and mixing

4. Extruder screws

- Standard extruder screw
- Variations on standard screw
- Mixing screws
- Barrier type extruder screws

5. Blown film dies

- Side fed dies
- Bottom fed dies
- Spiral mandrel dies
- Coextrusion dies
- Oscillating dies

6. Operational principles

- Startup procedures
- Purging and changeover
- Shut down procedures

Day 2, Paul Waller

7. Downstream equipment

- Comparison air ring systems
- Optimizing air ring setup
- Internal bubble cooling systems
- Automatic gauge control
- Bubble stabilizer systems
- Effect collapsing systems on gauge variation and roll geometry
- Surface treatment and limitations
- Web tension control and optimization
- Heat sealing and bag manufacturing

8. Troubleshooting

- Requirements for efficient troubleshooting
- Tools for troubleshooting
- Systematic troubleshooting
- Polymer degradation
- Extrusion instabilities
- Bubble instabilities
- Air entrapment and gel problems
- Die lines
- Poor optical properties
- Extrusion instabilities
- Wear problems
- Interfacial instabilities

9. Workshops

- Eliminate melt fracture
- Eliminate interfacial instability
- Eliminate gels
- Control bubble instability
- Diagnose surface adhesion problems
- Diagnose and eliminate wrinkles
- Optimize heat seal strength
- Diagnose and minimize gauge variation
- Extruder temperature profiles
- Diagnose and eliminate extruder surging
- How to adjust for screw and barrel wear

Books are offered at a discount only if ordered with a seminar and will be delivered at the seminar.

The course fees are:	Prior to April 20	April 21-May 4	After May 4
Blown Film Troubleshooting:	\$795.00	\$850.00	\$950.00
Sheet Extrusion:	\$795.00	\$850.00	\$950.00
Foam Extrusion:	\$1095.00	\$1145.00	\$1245.00
If taking 2 courses:	-\$100.00	-\$100.00	-\$100.00
3 rd attendee discount (5%):			
Understanding Book \$60.00			
Troubleshooting Book \$105.00			
Polymer Extrusion \$105.00			
Polymer Mixing \$70.00			
SPC in Injection Molding and Extrusion \$105.00			
Thermoplastic Foam Extrusion \$70.00			
A Practical Guide to Blown Film Troubleshooting \$125.00			
Total:			

A 5% discount will be given for the 3rd and up attendees from the same company. The course fees include lunch for each day and the handout material.

Cancellations: A refund, less \$100.00 cancellation fee, will be made if the registration is cancelled in writing by or on April 20, 2012. REE Inc. reserves the right to cancel one or more seminars or substitute instructors. Should this occur the attendees will be notified. We do not rake any responsibility for penalty fees or any other cost that may be incurred due to cancellation. We recommend that you book travel with refundable fares. Registrants who fail to attend are liable for the fees of the course registered for.

Fax registration to: 530-269-1084 or register online at www.rauwendaal.com

Name:			
Title:			
Company:			
Billing Address:			
City:		State:	
Country:		Zip:	
Phone:			
Fax:			
E-Mail:			
Charge:	Visa <input type="checkbox"/>	Mastercard <input type="checkbox"/>	American Express <input type="checkbox"/>
PO# or CC#			Exp.: <input type="text"/>
			CVC: <input type="text"/>



10556 Combie Rd # 6677. Auburn, CA 95602-8908