

# Troubleshooting Blown Film Extrusion Operations Seminar, May 15-16, 2014

## 1. Introduction & 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. 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

Books authored by Chris Rauwendaal:

The following books are discounted when you register for a seminar. If you want to order check appropriate box on registration form.

- [Polymer Extrusion](#)
- Understanding Extrusion
- Troubleshooting the Extrusion Process
- SPC in Injection Molding and Extrusion
- Polymer Mixing
- Mixing in Polymer Processing

Location:

Sheraton Sand Key Resort  
Clearwater Beach, FL  
727-595-1611

## 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



This book normally \$149.00 is available with seminar registration for \$125.00

The course fees are:	# of attendees	Through April 11	After April 11	Total
Troubleshooting Blown Film Extr:		\$850.00	\$950.00	
Foam Extr:		\$1200.00	\$1300.00	
If taking 2 courses per person:		-\$100.00	-\$100.00	
3 <sup>rd</sup> attendee discount (5%):				
Total:				

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

**Cancellations:** A refund, less \$150.00 cancellation fee, will be made if the registration is cancelled in writing by or on April 11, 2014. 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 take 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 on-line at [www.rauwendaal.com](http://www.rauwendaal.com)

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