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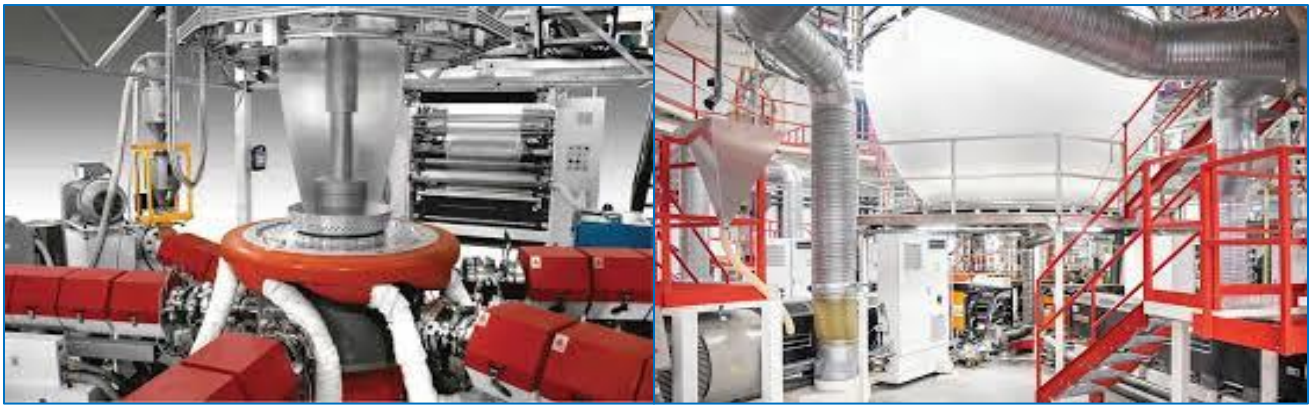

PE271-3D:
Blow Film Extrusion - Principles and Troubleshooting

Training Description:

Blown film extrusion is one of the most significant polymer processing methods. Several billion pounds of polymer, mostly polyethylene, are processed annually by this technique. While some applications for blown film are quite complex, such as scientific balloons, the majority of products manufactured on blown film equipment are used in commodity applications with low profit margins: grocery sacks, garbage bags, and flexible packaging.

This intensive training course is designed to provide participants with a detailed and up-to-date overview of blown film. It covers the of blown film extrusion; the extrusion fundamentals covering safety, hardware systems and inside the extruder; the blown film materials comprising of polymer, rheology and film properties; the blown film hardware that include equipment, bubble geometry, cooling and line control; and the blown film processing that includes bubble geometry versus process variables as well as process, structure and property relationship.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Describe how all parts of an extrusion line interact with plastic material to affect final product performance and quality
- ✓ Identify various polymer materials used to produce blown film and discuss important film properties
- ✓ Discuss in detail the hardware specific to blown film processing, including screws and dies
- ✓ Describe how bubble geometry creates the molecular structure that influences film properties
- ✓ Troubleshoot both extruder and film problems
- ✓ Operate a laboratory three-layer blown film line

What the attendees will learn:

- ✓ Hardware systems on an extruder and the functions that the extruder performs on the plastic material
- ✓ Various polymers used to produce blown film, including the rheological and solid state properties of these polymeric materials
- ✓ Upstream and downstream hardware specific to blown film extrusion
- ✓ Bubble geometry and the process parameters used to create specific bubble shapes
- ✓ Control systems, both manual and automated, for maintaining product targets
- ✓ Process/structure/property relationships in blown film: how bubble geometry affects molecular structure and film properties
- ✓ Basic blown film coextrusion principles
- ✓ How to solve both extruder and film problems

Training Designed for:

This course is intended for Operators, Set-up technicians, Process engineers, Quality control personnel, Floor supervisors, Plant managers and Film purchasers and technical staff working in laboratory department.

Training Program:

DAY ONE:

- PRE-TEST
- Introduction to Blown Film Extrusion
- Extrusion Fundamentals Overview
  - Safety issues
  - Hardware Systems
  - Inside the Extruder
- Blown Film Materials
  - Polymer Overview
  - Rheology
  - Film Properties

DAY TWO:

- Blown Film Hardware
  - Equipment
  - Bubble Geometry
  - Cooling
  - Line Control
- Blown Film Processing
  - Bubble Geometry vs. Process Variables
  - Process/Structure/Property Relationships
- Troubleshooting
  - Extruder Problems
  - Film Problems
- Co-extrusion
  - Dies
  - Interfacial Instability
  - Applications
- Quality/Variation

DAY THREE:

- Hands-on Workshops / Workshop/ Case studies
- Set-up/Operation and Film Testing
- Troubleshooting
- Multilayer Films
- Course Conclusion
- POST-TEST and EVALUATION

Training Requirement:

"Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client's request." (This hands-on, highly-interactive training includes simulator, real-life case studies and exercises).

This training course is available upon request in English or Arabic, virtual online live or face to face public/inhouse. Content, location and duration can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 30% Workshops & Work Presentations, Techniques
- 20% Based on Case Studies & Practical Exercises
- 20% Videos, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:
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Training & Career Development Department