

## COATING AND TESTING SOLUTIONS

Optimization works with the team at Eastman Kodak Company's pilot facility in Eastman Business Park. This collaboration offers you the ability to prototype and scale-up your materials into cost-effective product offerings using roll-to-roll manufacturing methods. Services available span a wide range of media manufacturing techniques (extrusion, lamination, coating) as well as testing expertise for process influencers.

### Extrusion Pilot Equipment

Thermoplastics can be formulated to achieve customer required physical properties and performance. These resins can be extruded in the form of thin films in multiple layers, or laminated onto other flexible substrates, to demonstrate a variety of product configurations.

**Leistritz Compounder:** Combine various thermoplastic resins with powder and/or liquid additives and reconstitute the mixture as a pelletized solid that can be case or extrusion coated in a subsequent process step.

- 0-50 lb/hr compounding rate
- Low volume powder addition
- Low volume liquid addition

**Extrusion Coater (MPX):** Extrude up to three resins simultaneously and either cast as a sheet or apply as a layer onto paper or plastic substrates.

- 1-200 fpm web speed
- 2-80 lb/hr extrusion rate
- 6" coated width
- 2-500 micron thick layers
- Uses 20 lbs resin/part
- In-line compounding

**Extrusion Coater (SXT):** Simultaneously extrude up to three resins and either cast as a sheet or apply as a layer onto paper or plastic substrates.

- 1-200 fpm web speed
- 2-80 lb/hr extrusion rate
- 6" coated width
- 2-500 micron thick layers
- Uses 20 lbs resin/part
- In-line compounding, CDT



### Coating Pilot Equipment

Three coating platforms are available to lay down thin films (both aqueous and solvent based). Coating methodologies are designed to demonstrate ability to control coverage and consistency of coated layer. The client will gain knowledge about the constraining parameters of selected coating processes as applied to his product.

**RC5 Slot Die Coater:** Apply 10-100 micron thick wet films of aqueous or solvent solutions onto paper, plastic or metal webs.

- 5-60 fpm
- 50-250 micron web thickness
- 4-9.5" coating widths
- Uses as little as 300 g of solution per sample
- CDT and UV curing

**GC1 Gravure Coater:** Apply 1-10 micron thick wet films of aqueous or solvent solutions onto paper or plastic webs.

- 50-600 fpm
- 4-250 micron web thicknesses
- 5" coated width on 6" support
- Uses as little as 300 g of solution per sample
- CDT

**Digital Pilot Coater:** Apply a wide range of wet thickness films of aqueous or solvent solutions onto paper or plastic webs using gravure, rod, blade, or curtain coating

- 50-5000 fpm
- 4-250 micron web thicknesses
- 9-16" coated widths
- Uses 10 kg of solution per sample
- CDT, electrostatic coating assist
- IR and NIR drying capability

## Environmental Conditioning

Test chambers provide the ability to subject your materials to controlled levels of all critical environmental factors. Your materials can be subjected to a single condition or a combination of conditions to simulate how your product will age. Critical environmental factors include:

### Temperature

- Temp conditioning at constant RH (23 to 90 C)

### Humidity

- Humidity conditioning at constant temp (5% to 90%)

### Ozone

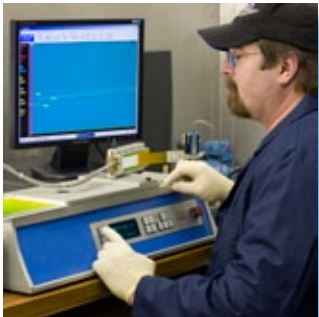
- 1-5 ppm ozone treatment at constant T/RH

### Light

- 50 kLux light fade at constant T/RH
  - \* xenon light source through glass with UV filtration
  - \* xenon light source through glass with no filtration
  - \* xenon light source with no glass or filtration
- 5.4 kLux light fade with xenon light source
- 5.4 kLux light fade with fluorescent light source
- 80 kLux fluorescent light fade through polycarbonate

### Walk-in chambers

- 250 sq ft
- 23-40 C
- 10-90% RH
- High Altitude simulation



## Physical Property Testing

A wide variety of tests can be conducted over a range of precisely controlled environmental conditions to enable an evaluation of the performance characteristics of your materials. Some examples are:

### Adhesion

- Adhesive Peel Force
- Blocking Analysis (paper and film)
- Scott Bond (z-direction)

### Curl

- ANSI/Disc Curl
- Coreset Curl
- Edgerise Curl

### Dimensional Stability

- Dimensional Change
- Shrinkage
- Thermal Expansion

### Friction

- Dynamic Coefficient of Friction
- Static Coefficient of Friction

### Optical Properties

- Colorimetry
- Illumination

### Mechanical Properties

- Brittleness
- Caustic Breakage
- MIT Fold
- Splice Strength Evaluation
- Stiffness
- Tensile/Modulus

### Surface Characteristics

- Bekk Vacuum
- Contact Angle
- Federal Profile
- Gloss/Haze
- Surface Roughness
- Sheffield Porosity/Smoothness
- Surface Resistivity
- Scratch Resistance

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please email [PilotServices@optimation.us](mailto:PilotServices@optimation.us).*

50 High Tech Dr. Rush, NY 14543  
585-321-2300 ph 585-321-2700 fax  
[www.optimation.us](http://www.optimation.us)

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