Save on high raw material costs and lost productivity by carrying out product development and process testing at the EDI® Technology Center

At a time when outside trial facilities are increasingly scarce, Nordson offers fully equipped process laboratories available for product development and test runs.

At the EDI Technology Center, located in Chippewa Falls, Wisconsin, USA, processors may test new technologies in the strictest confidence, ensuring that any new developments remain theirs.

Available Nordson EDI Technology

- **Six-Extruder Pilot Line & Cast Film/Sheet Line**
  Offering a multitude of tooling options from monolayer extrusion to coextrusion to multiplied structures containing up to 1,280 layers. Capable of producing products ranging from film to 100 mil sheet, these lines prove to be as versatile as they are economical.

- **Fluid Coating Line**
  This line can be used to test alternative fluid formulations, coating/substrate combinations, and other parameters without tying up production equipment. Practitioners of rolling can explore the advantages of slot die coating before investing in a commercial scale system.

- **Material Characterization**
  Our rheology lab is available to characterize the viscosity of your resins for the purposes of designing the internal flow channels of Nordson-built polymer processing equipment. This service is included with the purchase of new die systems.
Six-Extruder Pilot Line
- Mono-layer, coextrusion, and multiplied film or sheet
- Can produce 1 mil (.001”) to 100 mil (.100”) thick film or sheet
- Layer multiplication capabilities of up to 1,280 layers
- Approximately 762mm (30”) cast product width

Six-Extruder Cast Film/Sheet Line Equipment
- 38.1mm (1.50”) 24:1 L/D Air Cooled Extruder
- 25.4mm (1.00”) 24:1 L/D Air Cooled Extruder
- 25.4mm (1.00”) 24:1 L/D Air Cooled Extruder
- 44.45mm (1.75”) 30:1 L/D Air Cooled Extruder
- 44.45mm (1.75”) 30:1 L/D Air Cooled Extruder
- 44.45mm (1.75”) 30:1 L/D Air Cooled Extruder
- 914.4mm (36”) wide XP Express Roll Stand System
- EPIC Control System
- Cantilever Turret Winder
- Gravimetric Feeder Assembly
- Air Ionizer

- 812.8mm (32") Ultraflex™ Single Manifold Die with Coextrusion Entrance
- 3 Layer Ultraflow™ I Feedblock
- 5 Layer Ultraflow™ IV Feedblock
- 7 Layer Ultraflow™ I Feedblock
- 9 Layer Ultraflow™ I Feedblock
- (2) Layer Multiplier Units with up to (4) 4x Multiplying Cassettes
- Edge Trim Station
- Electrostatic and Pneumatic Edge Pinning Station
- Resin Drying Available
- Mark 3 Moisture Analyzer Available
Edi® Technology Center

Cast Film / Sheet Line
- Mono-layer, coextrusion, and multiplied film or sheet
- Can produce 0.5 mil (.0005”) to 15 mil (.015”) thick film or sheet
- Layer multiplication capabilities of up to 1,280 layers
- Approximately 152.4mm (6”) cast product width

Cast Film / Sheet Line Equipment
- 25.4mm (1.00”) 24:1 L/D Air Cooled Extruder
- 25.4mm (1.00”) 24:1 L/D Air Cooled Extruder
- 19.05mm (0.75”) 24:1 L/D Air Cooled Extruder
- 254mm (10”) Roll Stand
- (1) TCU Heat Exchanger
- 203.2mm (8”) Ultraflex™ Single Manifold Die
- 3 Layer Ultraflow™ I Feedblock
- 5 Layer Ultraflow™ I Feedblock
- (2) Layer Multiplier Units with up to (4) 4x Multiplying Cassettes
- Air Ionizer
- Edge Trim Station
- Electrostatic and Pneumatic Edge Pinning Station
- Resin Drying Available
- Mark 3 Moisture Analyzer Available

Fluid Coating Line
- Typical wet coating thickness ranges are 1 micron to 125 microns, depending on coating fluid rheology

Fluid Coating Line Equipment
- Working Width: 500mm (19.69”)
- Roller Width: 600mm (23.62”)
- Line Speed: 1-60 m/min (1-200 ft/min)
- Web Tension: 25-150N
- Dryer Length: 3m (120”)
- Maximum Drying Temperature: 235°C (455°F)
- UV Curing System
- Fluid Delivery & Filtration Systems
- Housed in a clean, temperature-controlled room
Rheology Analysis Capabilities: Dual Capillary Rheometer

- Dual bore capabilities allow for efficient rheological testing with an emphasis on the application of the Bagley Correction, as well as other rheological testing methods.
- With the ability to test for extensional/elongational viscosity, we can account for unique flow behavior materials with similar shear viscosities.
- We are better able to account for wall slip for some applications, such as PVC, which may include a range of plasticizers, oils, lubricants, and other additives, potentially affecting flow distribution and back pressure.
- The inclusion of advanced analysis software allows for detailed review of the rheological data, which ensures the accuracy of results while allowing for common corrections and fitting equations to be applied.
- With each application, material is tested and rheology data is used to ensure a proper mechanical design.

Film Analysis Equipment

- Leica Microtome is used to prepare film and sheet for cross-sectional analysis (samples ≥ 10 mil).
- Ram Optical Microscope with 576x magnification power.
  - Ability to capture photos of cross-section.
  - Ability to measure layer thickness (structure dependent).
  - Sartorius balance with .1mg resolution to determine film density and coating weights.
- Olympus MagnaMike 8500 for thickness measurement.

Moisture Analyzers & Resin Dryers

Mark 3 Moisture Analyzer

- Measures the levels of moisture in a sample by determining the amount lost through drying.
- Features infrared quartz tubes to heat samples.
- Weight before and during drying phase is monitored through use of electronic scale.

Resin Dryers

- Conair W100 Carousel Plus Dehumidifying Dryer:
  - Capacity: Approximately 226.8 kg (500 lbs).
- Conair MDCW050 Carousel Plus Dryer:
  - Capacity: Approximately 113.5 kg (250 lbs).