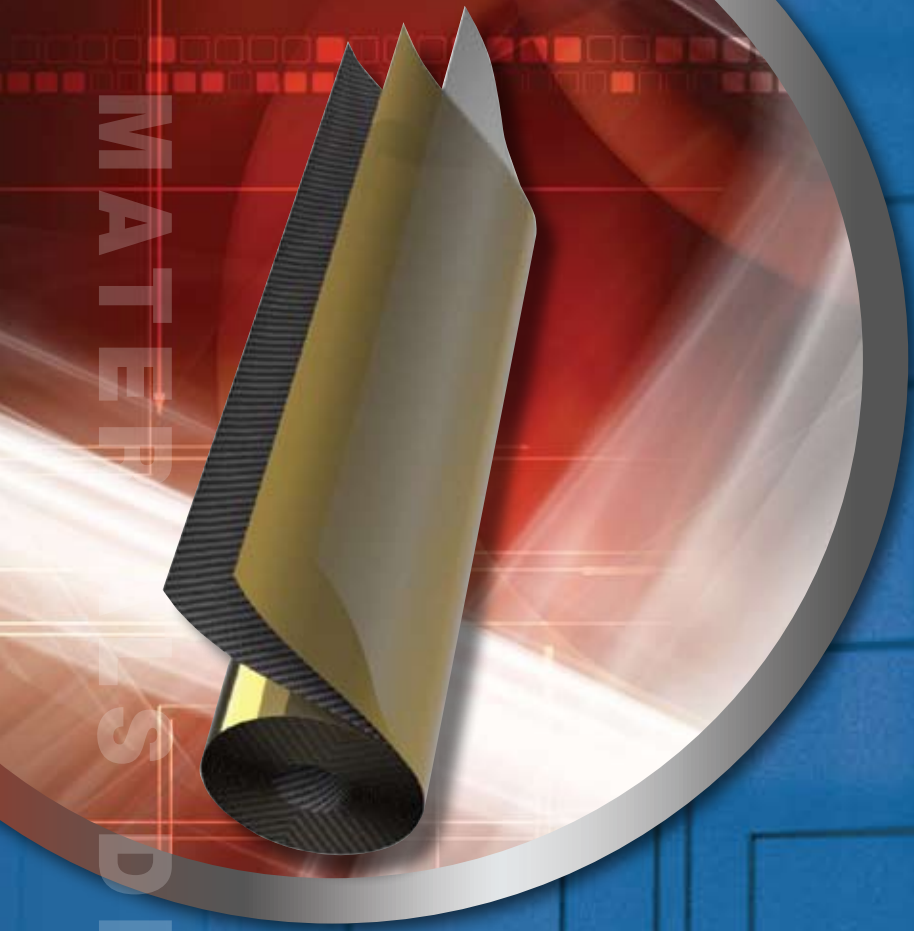

MATERIALS DEVELOPMENT

Specialty Materials Development

Materials Development Solutions

- State-of-the-art development capabilities for toll R&D of Specialty Materials
- Range of contract R&D services bringing together important aspects of Structure-Property-Processing relationship for materials development
- Assistance in technology transfer from R&D to scale-up

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MATERIALS PROCESSING

PROCESSING EQUIPMENT

Film Processing – Monolayer

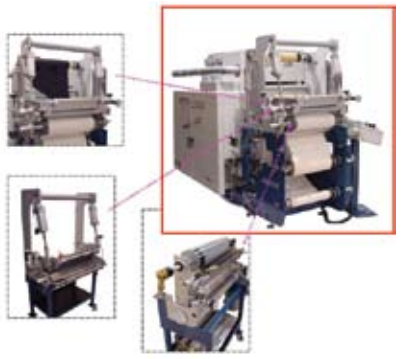
- 1.25" Extruder with 12"wide Cast film die and 2.5" diameter Blown film die
- Process variety of thermoplastics such as Urethanes, Polyolefin's, Fluropolymers etc.
- Capable of in-line polymer blending and fillers

Film Processing – Multi-Layer Blown Film Co-Extrusion

- 1.25" Extruders with 4" diameter die
- Process variety of thermoplastics such as Urethanes, Polyolefin's, Fluropolymers, Nylon, EVOH and tie layers
- Capable of in-line polymer blending and fillers

Coating and Lamination

- Designed to be flexible with fast precise and accurate adjustments
- Drying oven with 1 or 2 independent temperature zones
- Capable of handling up to 30" wide goods
- Capable of Embossing, transfer film handling and laminations
- Multiple chemical application heads (thickness blade, air blade, coating bar, Meyer rod, syncro/reverse coating roll, hot melt coating cylinder, impregnation and squeezing)
- Slitting roll goods with widths from 3" to 60"



Polymer Design

- Specializing in synthesis of
  1. Novel urethane polymers
  2. Shape memory polymers
  3. Thermosetting resins with RT shelf lives greater than 3 months
  4. Resins tailored for both rigid and flexible composite applications
  5. Resin systems compatible with standard composite pre-preg manufacturing methods

ANALYTICAL AND TEST CAPABILITIES

PHYSICAL PROPERTY TESTING

- Complete range of Physical Property testing to ASTM standard for
  - Tensile, Tear, and Puncture Strength
  - Electrostatics (ASTM D257, BS7506)
- Conditioning and testing @ -125°F to 500°F temperatures
- Adhesion Strength Testing
- Seam Testing
- Creep Testing
- Accelerated Aging

THERMAL ANAYSIS

Differential Scanning Calorimetry, DSC (-90˚ to 500˚ C)

- Melt Point and Heat Flow
- Storage & Loss Modulus, Tan δ
- Glass Transition Temperature, Tg
- Degree of Cure
- Oxidative Stability

Thermogravimetric Analysis, TGA (25˚C to 1000˚C)

- Thermal Stability
- Out gassing
- Degradation Temperature
- Composition %

Dynamic Mechanical Analysis, DMA (-143˚C to 600˚C)

- Glass Transition Temperature, Tg
- Storage & Loss Modulus, Tan δ
- Stress-Strain
- Creep

FT-IR

Used for organic compound ID, composition & analysis. Good for solids and liquids.

MICROSCOPY

Olympus BX51 Compound Research Microscope

- Brightfield/Darkfield
- Automated Stage
- 12.5, 50, 100, 200, 500, & 1000x Magnification
- Transmitted/Reflective Light
- Polarized Light
- DIC, Differential Interference Contrast
- Digital Camera
- SIS, Image Analysis Software

Nikon SMZ-U Stereo Microscope

- Continuous, 0.75 to 7.5x Magnification
- Reflected Light
- Digital Camera
- Image Editing Software

Olympus Inspection Scope

- Image Capture
- Fixed and Zoom Lenses to 500x

Hitachi S-2600N Variable Pressure Scanning Electron Microscope (SEM)

- Magnification: 25x-300,000x
- Resolution: 4nm (in high vacuum mode)

All services rendered will be treated as confidential and will be supported by a Non-Disclosure/Non-Analysis Agreement.

Massive Radome Developed with ILC Dover Custom Materials Towers Over Workers

ILC Dover is a world leader in soft goods development for

- Aerospace/Military
- Pharmaceutical
- Personal Protective Equipment.

The Research and Technology Materials Development team is supported by a team of Process, Design, Mechanical and Electrical Engineers. Always at the center of creating what's next they are expert in:

- developing high-end material construction using films and fabrics for challenging applications;
- analytical methods involved in understanding materials and their performance.

ILC Dover has been "*creating what's next*" for over 60 years.

To "*create what's next*" ILC Dover listens to its customers. Our skilled engineering staff, building on years of experience with NASA, military, and commercial customers, translates those needs into high performance products. We look forward to hearing from you so we can continue to "*create what's next*".

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