



# Polymer Engineering Company

*Polymer Engineering Company Ltd. (PEC) offers specialized expertise in the field of polymer technology. Consisting of a team of highly-qualified multidisciplinary personnel, and equipped with an array of state-of-the-art equipment, PEC has provided extensive polymer technical support to a multitude of industries, both locally and internationally, for the past 30 years.*

## SPECIALTY SERVICES

- ▶ Fundamental and applied research & development
- ▶ Product analysis and formulation
- ▶ Industrial and manufacturing technical support
- ▶ Failure analysis and materials evaluation
- ▶ Litigation support and expert witness services

## AREAS OF EXPERTISE

- ▶ Plastics
- ▶ Rubbers
- ▶ Polymer blends
- ▶ Coatings and paints
- ▶ Adhesive and sealants
- ▶ Surface phenomena
- ▶ Barrier materials
- ▶ Unique polymer applications
- ▶ Environmental impact protection (biological, chemical, UV and radiation, moisture, fire, etc.)



## INDUSTRIES SERVED

- ▶ Aerospace
- ▶ Automotive
- ▶ Consumer products
- ▶ Construction
- ▶ Cosmetic
- ▶ Defense
- ▶ Energy
- ▶ Electronics
- ▶ Forestry
- ▶ Healthcare and medical
- ▶ Packaging
- ▶ Sport and recreation
- ▶ Textiles

## AFFILIATIONS



American Coatings  
ASSOCIATION



#110 – 3070 Norland Avenue | Burnaby, BC, Canada V5B 3A6 | T: 604-298-7633 | F: 604-298-7658

[www.polymerengineering.ca](http://www.polymerengineering.ca)

[info@polymerengineering.ca](mailto:info@polymerengineering.ca)



To serve a wide client base in all areas of polymer technology, PEC has a modern in-house laboratory as well as access to a supplementary network of equipment and facilities, offering a full range of material processing, testing, and analysis capabilities.



## MATERIAL IDENTIFICATION AND ANALYSIS

- ▶ Infrared spectroscopy
- ▶ Thermal analysis
- ▶ Chemical analysis

## EVALUATION OF PROPERTIES

- ▶ Mechanical properties at a wide range of conditions
  - ▶ Tensile, flexural, compression, impact, tear, and more
- ▶ Physical properties
  - ▶ Density & specific gravity, hardness, and more
- ▶ Thermal properties
  - ▶  $T_m$ ,  $T_g$ , OIT
- ▶ Aesthetics
  - ▶ Colour, gloss, yellowing index
- ▶ Adhesion testing
  - ▶ Peel, climbing drum, direct-tensile, cross-cut, and more
- ▶ Abrasion testing
- ▶ Viscosity and rheology
- ▶ Coating thickness
- ▶ Specialty characteristics
  - ▶ CTE, MFI, damping, creep, surface contact and energy, and more

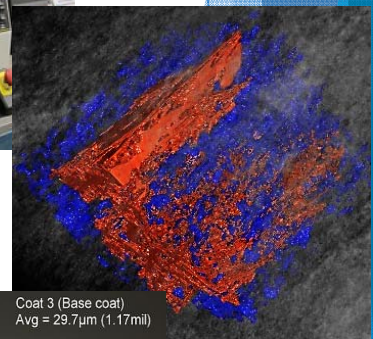


## PLASTICS / RUBBER PROCESSING

- ▶ Compounding
- ▶ Injection molding
- ▶ Compression molding
- ▶ Extrusion
  - ▶ Free film and sheeting, blown film, tubing, and more

## OTHER

- ▶ Evaluation of environmental and chemical impacts
  - ▶ Environmental exposure including accelerated weathering
  - ▶ Assessment of chemical resistance
- ▶ Microscopy (optical, SEM/EDX, TEM)
- ▶ Industrial imaging (MRI, CT)
- ▶ Specialty polymeric material synthesis and blending
- ▶ Custom test development
- ▶ Preparation of manufacturing prototypes
- ▶ Process scale-up / commercialization support



Coat 1 (Top coat) Avg = 25.9 $\mu$ m (1.02mil)	Coat 2 Avg = 35.7 $\mu$ m (1.40mil)	Coat 3 (Base coat) Avg = 29.7 $\mu$ m (1.17mil)
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Total  
Avg = 91.9 $\mu$ m (3.62mil)

