

## MATERIALS TESTING

Element Kitchener is an internationally accredited, CGP approved, well-rounded materials testing laboratory servicing the automotive, military, aerospace and consumer goods industries. The core of testing services offered center on the properties and durability of interior and exterior

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# DELIVERING INNOVATIVE PRODUCT TESTING AND CERTIFICATION SOLUTIONS

## PHYSICAL, MECHANICAL, SURFACE PROPERTY TESTING

- AATCC Gray Scale Evaluations
- Abrasion
- Car Wash
- Chemical Resistance
- Clean-ability
- Coating Thickness
- Color Evaluation
- Crocking
- Cure Test
- Five Finger Scratch
- Flexibility

## DURABILITY AND FATIGUE

- Combined Durability & Environmental
- Component Evaluation
- Experimental Stress Analysis
- Flammability, FMVSS302
- Flow Measurement
- Highly Accelerated Life Test (HALT)
- Life Cycle Endurance
- Load Vs De ection
- Mechanical Durability
- Pressure Cycling / Environmental Fatigue
- Servo Hydraulic Fatigue
- Structural Testing
- Vehicle Seat Cycle Testing

## ELEMENT KITCHENER DYNAMICS TESTING

- Combined Vibration and Environmental
- Classic Shock (Half-Sine, Sawtooth)
- HALT/HASS
- Linear Acceleration (Centrifuge)
- Random
- Random-on-Random
- Sine Dwell
- Sine-on-Random
- Sine Sweep
- Sound Testing
- SRS Shock

## ELEMENT KITCHENER CHEMICAL AND FAILURE ANALYSIS TESTING

- Contamination Analysis
- Failure Analysis
- Fourier Transform Infrared
- GC/MS With Gerstel TDS
- GC/MS With Headspace
- HPLC
- Microscopic Evaluation
- O<sub>2</sub>-Gas Analysis
- VOC Testing
- Volumetric Analysis
- SEM/EDS
  - » Energy Dispersive Spectrometer
  - » Fractography
  - » High Magnification Imaging
  - » Identification of Contaminants
- Measurement and Distribution
- Semi Quantitative Chemical Analysis
- Verification of Coating Types
- Thermal Analysis
  - » Compositional Analysis
  - » Crystallinity
- Cure
  - » DSC - Differential Scanning Calorimetry
  - » Melt Flow Indexer
  - » Melt Point
  - » Oxidative Induction Time
  - » Temp
  - » TGA
  - » Thermal Stability

## ELEMENT KITCHENER MECHANICAL TESTING

- Adhesion of Painted and Metallic Coating
- Breaking Strength of Plastics and Metals
- Brittleness
- Coating Weight
- Compressive Strength of Foam, Plastics and Metals
- Density and Specific Gravity
- Flexural Bending (3 Point) Modulus
- Hardness, Rockwell, Knoop/Vickers
- Heat Treat Verification
- Impact Testing
- IZOD
- Load Testing of Components/ Assemblies
- Peel Testing
- Shear Strength
- Tensile Properties
- Torque
- Weld Quality/Strength
- Welding and Brazing Analysis