

## Capabilities and equipment for testing of various conditions:

### **Kawabata Evaluation System**

Measuring fabric mechanical properties associated with "hand."

### **SDL Sweating Guarded Hot Plate and Kawabata Thermo-Labo** (small guarded hot plate)

for measuring thermal conductivity, and moisture-vapor permeability.

### **Quickwash™ Plus**

accelerated laundering system can be used to test permanence of treatments. (Simulates laundering in much reduced time.)

### **Constant Rate of Extension Testers**

for measuring tensile properties of fibers, yarns, and fabrics – capabilities range from a 500-gram load cell to a 10,000 kg load cell. Can also be used for measuring tear strength and compression.

**Scanning Electron Microscope** with image-analysis system.

**1000 x Stereo Microscope** with image analysis software capabilities.

**Flammability** equipment for Vertical and 45° angle tests.

Numerous **abrasion** test instruments including: Martindale, Inflated Diaphragm, Taber Rotary Platform, Flexing and Abrasion, Wyzenbeek Oscillating Cylinder.

**Pilling** – Random Tumble and Martindale testers.

**Snagging** – Mace and Bean Bag.

**Elmatear** – Falling Pendulum tear tester.

**FAST** – Fabric Assurance Simple Test instruments, designed by CSIRO to determine fabric mechanical properties relating to tailorability of wool-containing fabrics. Instruments can be used individually for measuring bending, elongation, bias elongation, and compression properties of textile materials.

### **Colorfastness equipment:**

Q-Sun 1000, Xenon light instrument for lightfastness and loss in strength to long-term exposure, etc.

**Launderometer** – accelerated colorfastness to laundering.

Fume fading, or Oxides of Nitrogen.

Colorfastness to Crocking.

Colorfastness to perspiration, water, etc.

**"Newton"** – Walking, Sweating Manikin made by Measurement Technologies Northwest and housed in an environmental chamber.

For more information about the Materials Evaluation Laboratory, please contact Teri Loftus, Marketing Associate at 215.951.5947 or [LoftusT@PhilaU.edu](mailto:LoftusT@PhilaU.edu).

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THERMAL CONDUCTIVITY

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## Materials Evaluation Laboratory

A National Resource



# To identify problems and ensure safety . . .

## Philadelphia University's Materials Evaluation Laboratory

Philadelphia University, founded in 1884 as the first private textile school in the country, today offers expertise in many areas of materials, textiles and apparel testing conducted by the Materials Evaluation Laboratory (MEL). Housed in the Philadelphia University Research Center (PURC), a dedicated, state-of-the-art facility conducting research in textiles and apparel, MEL is perfectly positioned to lead efforts in identifying problems and helping to ensure the safety of textiles and apparel.

Also housed in PURC is the Laboratory for Engineering Human Protection (LEHP), which carries out systematic research on comfort, protection and performance of fabrics, including psychological factors and parameters, perceived user-confidence data and factors, and research in textile and garment engineering and materials science. Currently, LEHP is conducting research centered on the development of more sophisticated and effective protective-garment systems by utilizing the Walking, Sweating Manikin.

MEL's capabilities include testing for potentially toxic chemicals (notably in textiles and apparel manufactured overseas); and, given the out-of-country manufacturing challenges to the textile and apparel industries, MEL offers a full array of apparel performance testing, including Kawabata Testing, which is available for product quality, assurance and product integrity-compliance challenges.

A wide range of equipment to pinpoint existing negative conditions in textiles, apparel, and manufactured items utilizing textile components — most notably imported goods:

Sweating Guarded Hotplate



Electronic unit for  
Kawabata Bending Tester

Surface Electronic Unit



Kawabata Tensile/Shear  
Measuring Instrument



Kawabata Air Permeability Tester