

# TESTING LAB

Process	Tester	Q'ty	Description
Chemical	Washing machine (US)	24	Dimension, Bow & Skew, Appearance
	Washcator(EU)	4	Dimension, Bow & Skew, Appearance
	Tumble dryer	3	Dimension, Bow & Skew, Appearance
	CF to washing(20ea mount)	2	Color change, Self staining
	CF to light	1	Color change, Faded out
	CF to crocking	2	Color migration
	CF to hot press	1	Color change under high Temp & Pressure
	CF to water, perspiration, sea water	1	Color change, Self staining
Physical	Phenolic yellowing	1	
	Tear strength	1	Warp and weft direction
	Tensile strength	1	Universal tester(Seam, Bursting, Tear, Tensile)
	Martindale abrasion	1	Color change, Yarn broken
	Pilling abrasion	1	Pill and fuzz appearance
	Hydrostatic pressure	5	Water pressure
	Hydrostatic pressure(High)	1	Water pressure
	Hydrostatic pressure(Suter)	1	Water pressure
	Water vapor transmission(Calcium, Water)	1	Water vapor transmission
	Water vapor transmission(Potassium)	1	Water vapor transmission
	Air permeability	1	
	Spray	2	Water repellency
	Bundesmann	1	Tru-rain
Rain	1	Water pressure under raining condition	
Microscope	Scanning Electronic Microscope	1	X 300,000

## LAB ACCREDITED BY



DIMENSIONAL STABILITY  
TO WASHING

AATCC 135



SKEWNESS  
TO WASHING

AATCC 179

APPEARANCE  
AFTER WASHING

AATCC 124

pH VALUE

AATCC 81

COLORFASTNESS  
TO PERSPIRATION

AATCC 15

ISO 105 E04



COLORFASTNESS  
TO WATER

AATCC 107

COLORFASTNESS  
TO PERSPIRATION

ISO 105 E01

COLORFASTNESS  
TO SEA WATER

AATCC 15

ISO 105 E04

AATCC 106

ISO 105 E02



COLORFASTNESS  
TO WASHING

AATCC 61



ISO 105 C06

PHENOLIC  
YELLOWING

ISO 105 X18



COLORFASTNESS

AATCC 61

ISO 105 C06

AATCC 107

ISO 105 E01

AATCC 15

ISO 105 E04

AATCC 106



COLORFASTNESS  
TO LIGHT

AATCC 16-3



ISO 105 B06

COLORFASTNESS  
TO CROCKING

AATCC 8

ISO 105 X12



pH VALUE

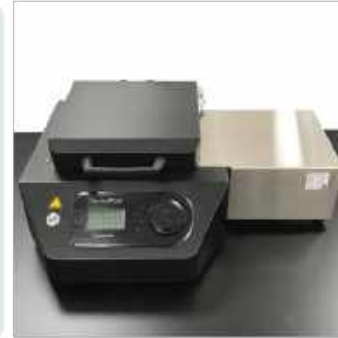
AATCC 81



COLORFASTNESS  
TO HOT PRESSING

AATCC 133

ISO 105 X11

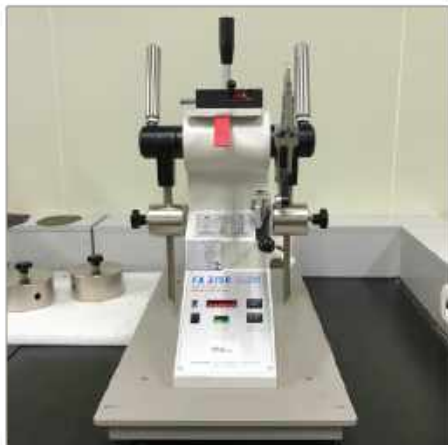


Test Item

Method

TEARING STRENGTH  
(ELMENDORF)

ASTM D1424 (ELMENDORF)  
ISO 13937-1 (ELMENDORF)



ABRASION RESISTANCE  
(MARTINDALE)  
PILLING RESISTANCE  
(MARTINDALE)

ASTM D4966  
ISO 12947-2  
ASTM D4970  
ISO 12945-2



PILLING RESISTANCE  
(MARTINDALE)

ASTM D4970  
ISO 12945-2



TEARING STRENGTH  
TENSILE STRENGTH  
(GRAB METHOD)  
RESISTANCE  
TO SEAM SLIPPAGE

ASTM D2261  
ISO 13937-2  
ASTM D5034  
ASTM D434  
ASTM D1683



HYDROSTATIC PRESSURE

ISO 811  
AATCC 127  
JIS L 1092-A



RAIN TEST

AATCC 35



HYDROSTATIC PRESSURE

JIS L 1092-B



WATER VAPOR  
TRANSMISSION

ASTM E96 A  
ASTM E96 B  
ASTM E96 BW  
ASTM E96 C  
ASTM E96 D  
JIS L 1099-A1  
JIS L 1099-A2  
BS 3424-34



HYDROSTATIC PRESSURE  
(SUTER TEST)

SH06-12-6



SPRAY TEST

AATCC 22  
ISO 4920



WATER VAPOR  
TRANSMISSION

ASTM E96 A  
ASTM E96 B  
ASTM E96 BW  
ASTM E96 C  
ASTM E96 D  
JIS L 1099-A1  
JIS L 1099-A2  
JIS L 1099-B1  
BS 3424-34



AIR PERMEABILITY

ASTM D737  
JIS L1096-A



Test Item  
Method

# SEM, Scanning Electronic Microscope

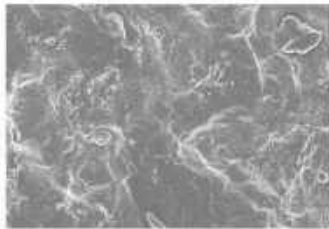
- A scanning electron microscope (SEM) is a type of electron microscope that produces images of a sample by scanning the surface with a focused beam of electrons.
- The electrons interact with atoms in the sample, producing various signals that contain information about the surface topography and composition of the sample.
- It can be enlarged up to 300,000 times.

## [Ion Sputter Coater]

- Equipment for forming a metal thin film by generating plasma on a sample surface that is not conductive or weak.
- It is necessary to see the sample more clearly.



\*SEM image on the surface of membrane

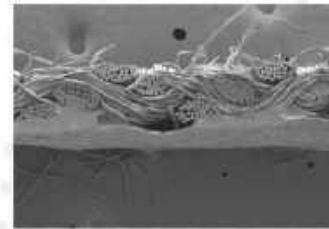


X 5K

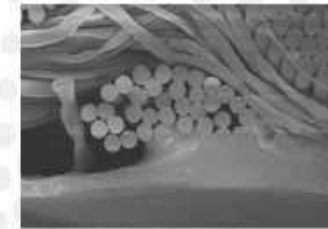


X 10K

\*SEM image on the cross section of 2Layer



X 100



X 400

# Bundesmann Rain Test



This comprises a system of 300 identical drop forming devices equally distributed over a circular horizontal surface of 406mm diameter (area approx.1300cm).

The approximate diameter of the drop produced by each drop is 4mm. Water emerging from the drop former produces a drop of approx. 0.07ml. The water flow of the rain shower equipment can be varied so that the time related flow of the water prescribed for the test can be set to  $100 \pm 5$  ml for a rain shower surface area of 100cm<sup>2</sup>.

**The drop fall height is 1500mm.** For the rain shower test, normal tap water is used which is passed through a mechanical filter to remove any coarse contaminants. The water temperature should be  $20 \pm 3^{\circ}\text{C}$  or  $27 \pm 2^{\circ}\text{C}$  (the latter being for tropical countries).

Set a timer for 2.5 minutes exposing the empty cups to the shower for this period of time. After this period of 2.5 minutes, measure the amount of water in each cup using a measuring cylinder. When the tester is set as required **there should be  $200 \pm 10$  ml of water in each cup after 2.5 minutes.** Adjust the flow rate adjust valve to achieve this rate of flow (if needed). This should be checked regularly and at least every time the unit is switched off.

# Q-max test KES F7 Thermo Labo II

Coldness and warmth feeling · Thermal conductivity · Heat retention properties



The sensation of coldness or warmth when skin is touching an object, is referred to as the “coldness and warmth feeling”, which varies depending on the amount of heat transferred from the skin to the object. This device measures such feeling by evaluating the “ $q_{max}$ ” value (peak heat flux).

The KES-F7 Thermo Labo can be used to evaluate such products as bedding material meant to offer a feeling of coldness in summer, and underwear material meant to offer contact warmth in winter.

# Pilling : ASTM D3512

## RANDOM TUMBLE PILLING TESTER



### INCREASED CAPACITY

The 4 chamber instrument offers opportunities for increased production and improved laboratory efficiency.

### SPECIMEN ROTATION

High confidence that the specimens will continue to tumble during the entire duration of the test.

### CONFIDENCE IN RESULTS

As the frequency of samples dropping to the bottom of the chamber has been significantly reduced, if not eliminated, the user has greater confidence in the subsequent results.

### INTERCHANGEABLE IMPELLERS

Enable tests to be carried in accordance with 9 standards, which include options for air flow.

### INERS

Cork liners and Neoprene® rubber are available for compliance to 9 standards. Users can run in new Neoprene liners with one touch on the relevant symbol on the Touchscreen.

### RELIABLE ROTATION

The specimens are agitated within the chambers by a high-speed (1200 rpm) impeller at a constant calibrated speed which is guaranteed irrespective of variations in the electrical supply voltage.

### DUST AND LINT FILTERS

Prevents the build-up of excessive lint around the instrument creating a cleaner working environment.



# Snagging : ASTM D3939

## MACE SNAG TESTER



### REPEATABILITY & ACCURACY

Our aim when designing ProMace was to significantly improve upon the repeatability and accuracy of the mace snag testers available in the market.

### VDA COMPLIANT

When used with IMAT-UVE mace balls the ProMace is compliant with VDA, Verband der Automobilindustrie e. V., the German Automotive Industry Association.

### MACE BALL HOLDERS

The mace balls are stored in non-contact holders designed to remove the risk of pin damage.

### REMOVABLE CYLINDERS

The sample holder cylinders are removable. This makes the fitting and drying of the felt sleeves and the sample mounting very easy.

### 2 x 2 ROLLER CONFIGURATION

The vertical 2 x 2 configuration of our mace snag tester has a footprint 50% smaller in comparison with other mace snag testers.

### REMOVABLE DEBRIS TRAY

Removable sliding trays collect the debris from the test for easy cleaning.

### REDUCED RISK IN PIN DAMAGE

The unique design of ProMace offers a significant reduction in the threat of the pin points breaking.

### SAFETY GUARD

A hinged interlocked safety guard fully encloses the instrument - the testing is performed with complete safety.

### MACE INSPECTION HOLDER

A mace ball inspection holder is designed for the user to hold the mace ball safely and securely whilst inspecting and changing the points.