



Comfort Testing

MMT[®]: Moisture Management Tester and DryRate 201

The Science of Comfort

Textiles purposefully designed to help the wearer keep cool, comfortable and dry using moisture management techniques require specialized testing.

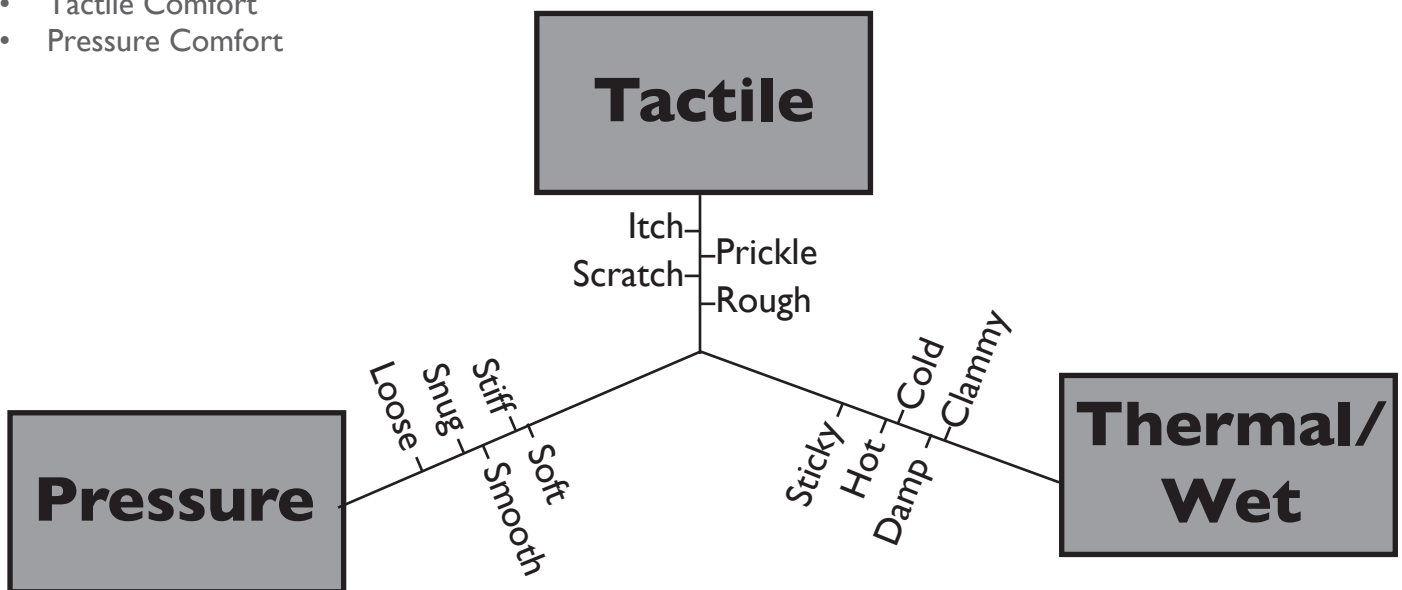
With the demand of active-wear far out pacing the growth of the apparel market as a whole, it's important for clothing designers and manufacturers to understand the science behind developing performance apparel that is both functional and comfortable.



Perception of Comfort

There are three key factors that contribute to the subjective Human “Comfort” Perception

- Thermal-Wet Comfort
- Tactile Comfort
- Pressure Comfort



Over 50% of a person’s “Comfort Level” while wearing a garment comes from the “Thermal / Wet” function. When we are hot, we sweat to cool off, and that moisture is absorbed by our clothing. How well that clothing transfers the moisture across or away from the skin effects how well the material can dry and both of these function effect how the individual feels while wearing the garment.

The principles for measuring moisture management and dry time have been researched and documented by AATCC and are published as Test Methods 195 and 201. Testing these properties require specialized instruments. SDL Atlas developed the MMT® (Moisture Management Tester) and DryRate 201 to specifically meet the requirements of these methods and aid in the development of performance apparel textiles.

The MMT allows a fabric technologist to “see” how the liquid moisture moves from one surface to another, allowing them to make necessary modifications during the manufacturing and finishing processes to best suit the end use application. The DryRate 201 on the other hand, tells the drying performance of a fabric by showing how quickly it can dry. Having the test results from both the MMT and DryRate 201 give a comprehensive picture of exactly how a textile performs in managing liquid moisture.

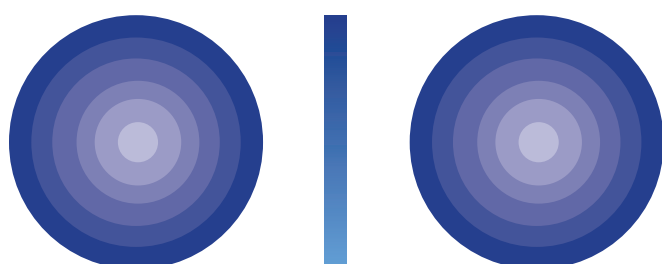
MMT[®]

Moisture Management Tester

The MMT performs innovative measurement of dynamic moisture transport of performance fabrics.

Water Location vs. Time

Low Water Content



Top (Inner)

High Water Content
Measure Time (s)
= 120.0 sec

Bottom (Outer)

	Top Surface	Bottom Surface
Wetting Time	2.953	3.046
Absorption Rate (ϕ/s)	71.8323	68.7287
Max Wetted Radius (mm)	20.0	20.0
Spreading Speed (mm/s)	4.232	4.1326
One Way Transport	-25.8368	

Test Description

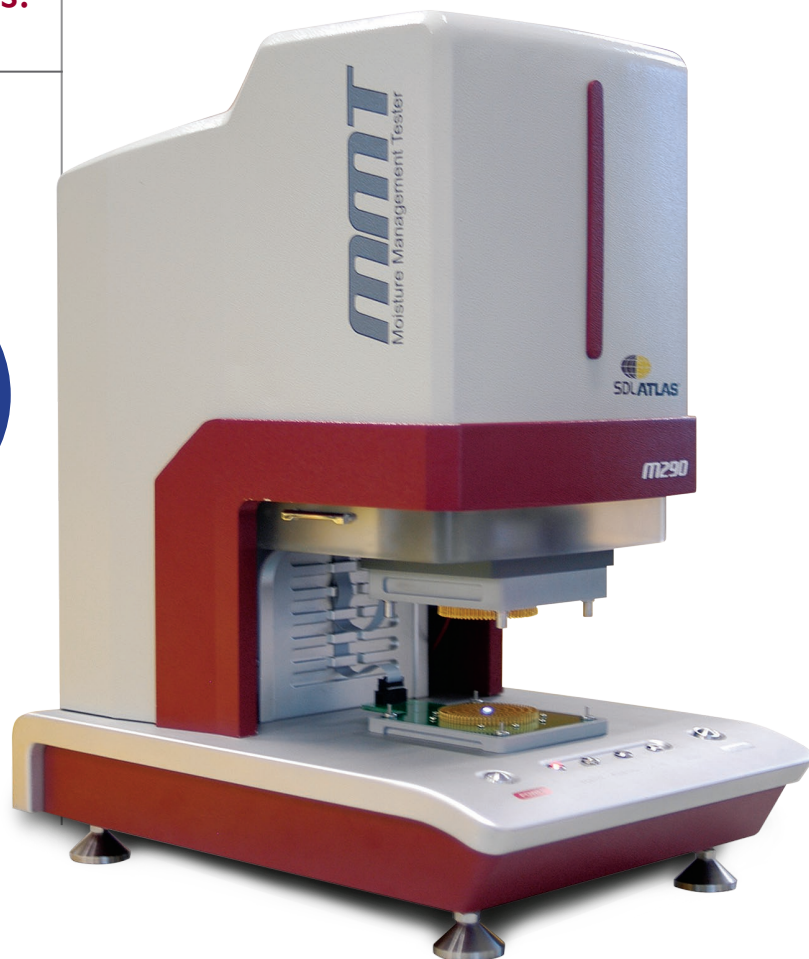
MMT

Even Faster Results

One 2-minute test gives a comprehensive profile of a fabric's performance with the following data:

- Overall Moisture Management Capability
- Accumulative One-Way Transport Capability
- Wetting Time for top and bottom surfaces
- Absorption Rate for top and bottom surfaces
- Max Wetted Radius for top and bottom surfaces
- Spreading Speed for top and bottom surfaces

The MMT is the only instrument on the market that can precisely measure the liquid management properties of performance and technical fabrics, ensuring the comfort and protection that consumers demand.



Upper Sensor and protective translucent door are motorized to automatically move into position



Durable, open case allows easy access to testing samples and instrument sensors

STANDARDS:

AATCC 195

GB/T 21655.2

Moisture Management measurements go far beyond the very basic wicking test and let fabric producers design a product that meets the full needs of the end user.

DryRate 201

Drying Rate Tester

Precision Drying Rate Measurements made simple

DryRate 201 is a fully automated and advanced instrument with a heated metal plate, which simulates human skin starting to perspire at 37°C, that determines the drying rate based on evaporation rate from the fabric.



Testing conditions are constantly monitored by the built-in anemometer and infrared thermocouple probe.

Based on the principle of a wetted fabric against a heat source with air flow, the evaporation of water will remove heat to reduce the surface temperature. Detecting the temperature of the fabric surface accurately determines whether the textile has become completely dry.

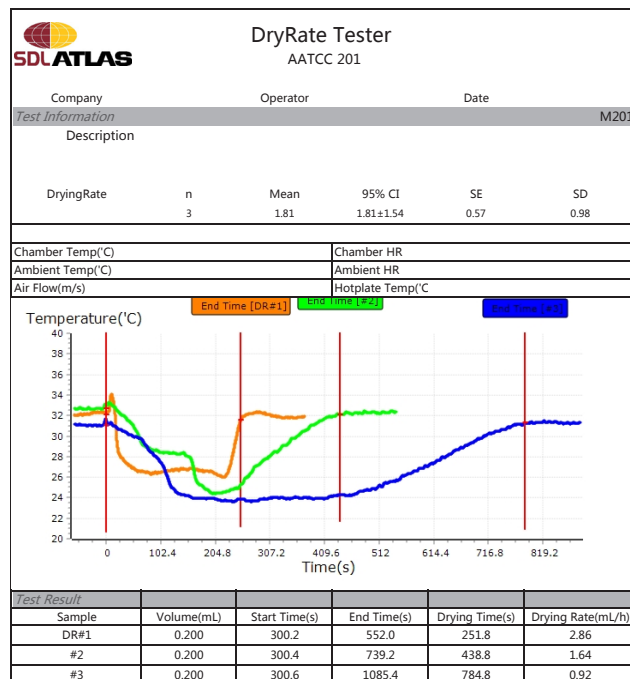
Test Results

All test results are included in test reports which can be displayed either directly on the instrument screen or on a connected computer for further analysis and comparison to previous tests.

Fabric	Start Time (s)	End Time (s)	Test Time (s)	Volume Max (ml)	Drying Rate (ml/h)
1	306.0	580.0	274.0	0.20	2.62
2	306.0	582.0	276.0	0.20	2.60
3	306.0	591.0	285.0	0.20	2.52
4	306.0	593.0	287.0	0.20	2.50
5	306.0	590.0	284.0	0.20	2.53

STANDARDS:

AATCC 201



Providing confidence in standard based testing through expertise and global partnering



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