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SOFTLINES

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NEW AATCC TEST METHODS FOR WICKING AND MOISTURE MANAGEMENT PROPERTIES

Moisture transfer properties and drying rate of fabrics are two major factors affecting the physiological comfort of garments. Moisture transfer and quick dry behavior of textiles depend mainly on the capillary capability and moisture absorbency of their fibers. These characteristics are especially important in sport garments next to the skin or in hot climates. In these situations, it is critical that textiles are able to absorb large amounts of perspiration, draw moisture to the outer surface and keep the body dry. Therefore, in order to optimize these functionalities in sport clothing, and to support moisture management claims, it is necessary to determine the wicking behavior and quick drying capability of functional fabrics.

The American Association of Textile Chemists and Colorists (AATCC) has developed and approved several new test methods for evaluating wicking or moisture management properties of performance fabrics ^{1,2}.

- AATCC Test Method 197-2011, Vertical Wicking of Textiles
- AATCC Test Method 198-2011, Horizontal Wicking of Textiles
- AATCC Test Method 199-2011, Drying Time of Textiles: Moisture Analyzer Method

It is well known that the heat and moisture transfer properties of clothing materials are critical to thermal comfort of garments as they affect the direct and latent heat loss from the human body. The objective measurement of the moisture transfer properties of clothing is therefore important to apparel product development. There are two parameters most commonly used to characterize the properties of liquid moisture management performance of fabrics, which are the rate of absorbency and the total absorbent capacity. The former determines the rapidity with which fluid is imbibed while the latter determines the total capacity of the material to absorb and hold fluid.

The new AATCC test methods were developed for determining moisture transmission through textiles by the rate of distance per unit of time or area per unit of time and their drying time.



¹ [The American Association of Textile Chemists and Colorists \(AATCC\) – New Release](#)

² [AATCC Test Methods & Evaluation Procedures](#)

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WICKING PERFORMANCE	AATCC TM 197-2011	AATCC TM 198-2011
Purpose and Scope	- To evaluate the ability of vertically aligned fabric specimens to transport liquid along and/or through them - Applicable to woven, knitted, or nonwoven fabrics	- To evaluate the ability of horizontally aligned fabric specimens to transport liquid along and/or through them - Applicable to woven, knitted, or nonwoven fabrics
Test Principle	The rate (distance per unit of time) liquid travels along and/or through a fabric specimen is visually observed, manually timed and recorded at specified intervals	The rate (area per unit of time) liquid travels through a fabric specimen is visually observed, manually timed and recorded at specified intervals

DRYING TIME	AATCC TM 199-2011
Purpose and Scope	- To evaluate the drying time of knit, woven or nonwoven fabrics at an elevated temperature using a gravimetric moisture analyzer - By performing the test at non-standard textile testing conditions, it is possible to simulate drying at body temperatures or to perform testing at temperature that simulate conditions of use
Test Principle	- Water is applied to the test specimen and then dried at a pre-selected temperature (37°C), which simulates body temperature, in an automated moisture analyzer - The time required for a test specimen to reach a designated endpoint is measured and recorded as the drying time

SGS will follow up and inform interested parties on any test method update.

Throughout our global network of laboratories and offices, we offer high quality testing for textile, footwear and accessories. For more information, please feel free to contact us or visit our website at www.softlines.sgs.com.



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