

# PERFORMANCE TESTERS

Performance Textile Testing

# Testing for Performance

Textiles today are specially engineered to provide more than just coverage. They are increasingly designed to give better performance under a specific set of conditions. Many people relate performance fabrics to athletic clothing, however, specialized fabrics extend far beyond active wear. Other uses include outdoor apparel meant to keep you dry and protected from UV rays while maintaining proper body temperature; protective uniforms used for firefighting and the military; and scrubs used in the medical industry.

Testing these fabrics requires looking beyond the more common tests such as shrinkage, colorfastness, and seam strength. Some technical features are more difficult to test, measure, and quantify. Sometimes several individual tests must be done on different portions of a fabric in order to try to categorize the capability.

## European Guidelines for Thermoregulatory Properties of Textiles (CEN/TR 16422:2012)

In 2012, the CEN/TC 248 working group developed a new technical report designed to help retailers, manufacturers and consumers with the evaluation of the thermoregulatory properties of textiles. It also helps with the selection of the most appropriate methods and guideline requirements, which would be suitable to define individual material performance requirements for specific end use products.

The report provides guidance through the use of three performance levels for the different thermoregulatory properties:

- Thermal insulation
- Liquid sweat management
- Air permeability
- Water vapor transmission
- Water resistance and repellence

SDL Atlas has a full range of instruments specially designed to keep pace with the advancement of technologies necessary for performance testing, including all major international standards and those recommended by the CEN/TR 16422:2012 report. These include the MMT® Moisture Management Tester, Sweating Guarded Hotplate, AirPerm, HydroPro, and PermaVape. These instruments allow textile manufactures to design and test performance textiles effectively, accurately and quickly.





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

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.

### Water Location vs. Time

Low Water Content

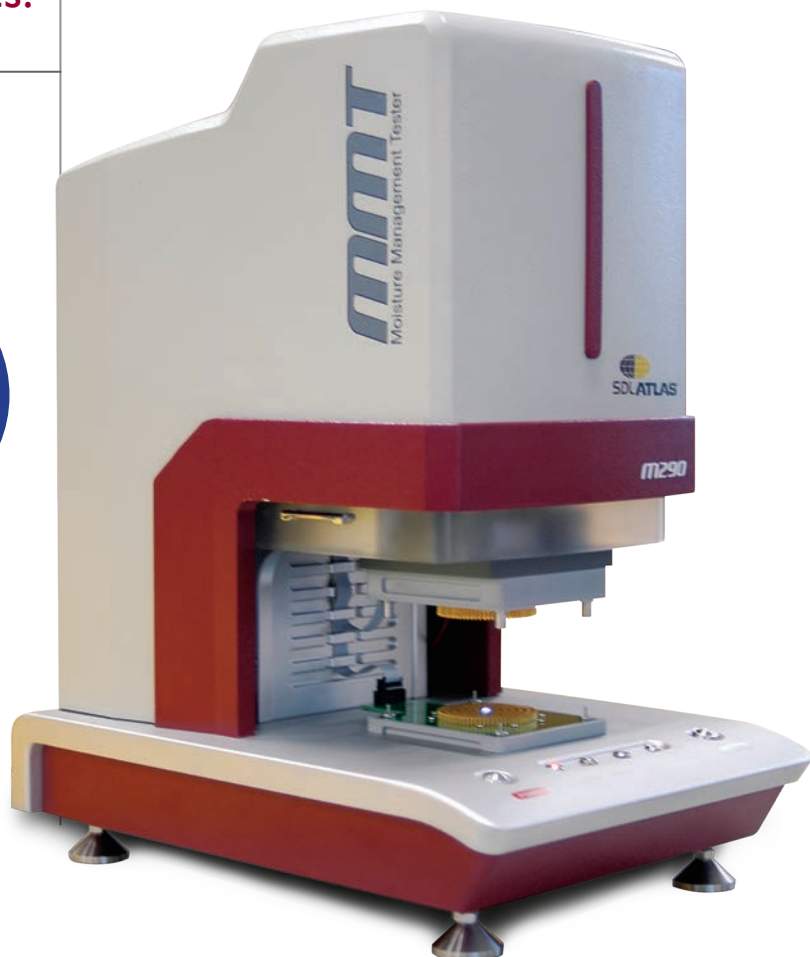


Top (Inner)

High Water Content  
Measure Time (s)  
= 120.0 sec

Bottom (Outer)

	Top Surface	Bottom Surface
Wetting Time	2.953	3.046
Absorption Rate ( $\phi/s$ )	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	



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

### 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

#### 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.

# Sweating Guarded Hot Plate

applications:



Quality Control



Apparel



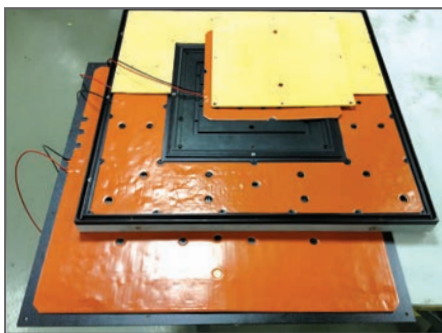
Performance

**The Sweating Guarded Hotplate provides a fabric's permeability, breathability and heat loss from sweat evaporation.**

Often referred to as the "Skin Model", the Sweating Guarded Hotplate measures thermal properties and water vapor resistance of fabrics and other materials under steady state conditions. The test simulates the heat and mass transfer process which occurs next to human skin.



The sintered (porous) bronze hotplate and controls are integrated into a chamber that is maintained at precise temperature, humidity, and airflow conditions.



The specialized 250 mm by 250 mm sintered bronze hotplate with Individual temperature control of hotplate, side, and bottom guards gives the best simulation of human skin versus other plates that have a distinct pattern of drilled holes. Nine temperature measurement channels (3 sensors in each section) work simultaneously to accurately control and measure the temperatures of the hotplate and guards.



The purpose-built, conditioned cabinet allows for complete control and monitoring of air temperature, air speed, relative humidity, and heater power consumption. The air speed sensor located directly above the sample provides more accurate readings than other available models.

## STANDARDS:

ASTM D1518

ASTM D1518-11a Option 2

ASTM F1868

EN 343

ISO 11092

GBT 11048

# AirPerm

## Air Permeability Tester

applications:



Quality Control



Apparel



Performance



Automotive

**The AirPerm's advanced pressure system automatically measures the flow of air through a performance fabric.**

The AirPerm makes air permeability testing much more affordable while maintaining confidence that test results meet international and retailer standards. Designed to meet air permeability standards for paper, textiles, and non-wovens, the AirPerm provides quick, straightforward results in the unit of measure of your choice.



Automatic ranging system that detects the size of the installed test head and determines the appropriate pressure range required.



The powerful, yet quiet vacuum accommodates a variety of test plates to suit every application and features easy calibration for daily checks.

The long arm and large table allow for larger samples to be evaluated in multiple areas.



### STANDARD

### TEST HEAD SELECTION

	5 cm <sup>2</sup>	20 cm <sup>2</sup>	25 cm <sup>2</sup>	38 cm <sup>2</sup>	50 cm <sup>2</sup>	100 cm <sup>2</sup>
adidas TM 6.08		●				
ASTM D737	●			●		●
BS 5636	●					
DIN 53887		●			●	●
EDANA 140.1		●			●	
EDANA 140.2		●			●	
GB/T 5453	●	●			●	●
ISO 9237	●	●			●	●
JIS L 1096-A				●		
TAPPI T251				●		
WSP 70.1	●	●	●	●	●	●
Dense Samples						●

\*\*Black dots denote preferred test head. Red dots denote acceptable alternates.

# HydroPro

## Hydrostatic Head Tester

applications:



Apparel



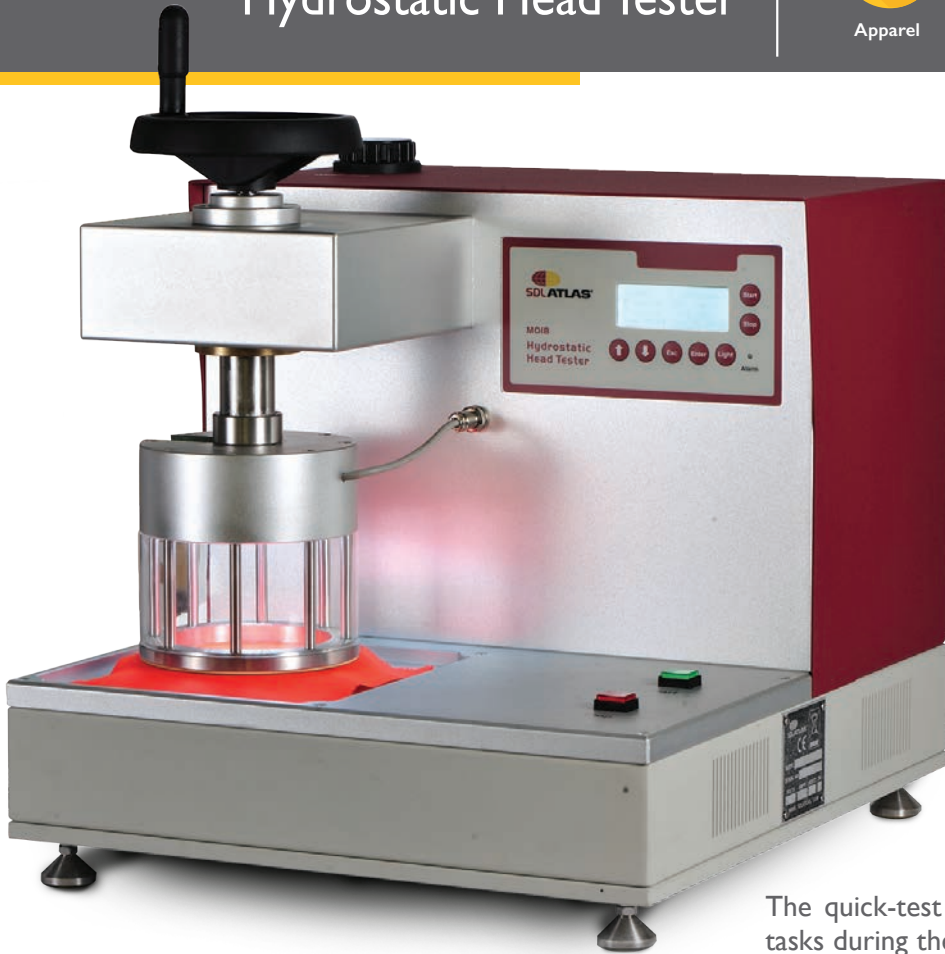
Quality Control



Performance



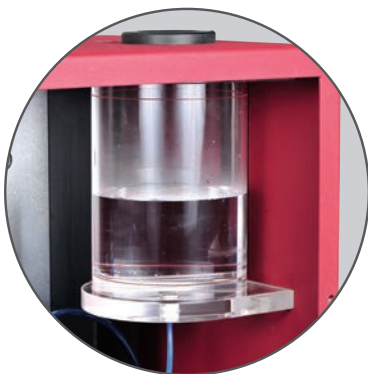
Automotive



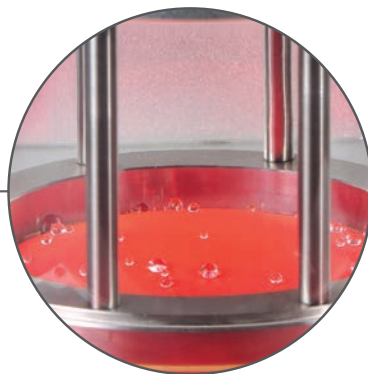
The best value hydrostatic head tester available, the **HydroPro** is powerful, intelligent, and efficient.

### Time Saving

The quick-test function allows users to perform other tasks during the first 80% of the standard test. An alarm indicates fail pressure is close and a technician should begin observing.



- Internal water reservoir refills test head on command



- Maximum pressure 3 bar



- LED lighting of sample area
- Clear safety shield
- 100 cm<sup>2</sup> test head included

#### STANDARDS:

AATCC 127	BS 3321	ERT 120-1	ISO 811	AFNOR G07-057	BS EN 20811	ERT 160-0	ISO 9073-16
JIS1092 B-b	ASTM D751	EN 343	GB/T 4744	IST 080.4 (01)	IST 080.6 (01)	WSP 080.6.R4 (12)	

# PermaVape

applications:



Apparel



Quality Control



Performance

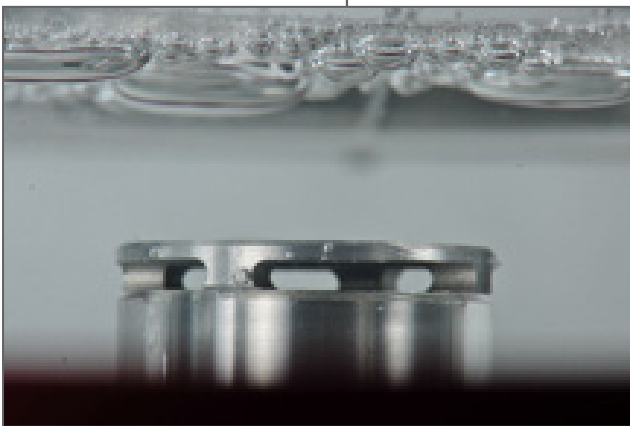


**STANDARDS:**

ISO 15496

The user-friendly **PermaVape** delivers accurate and reliable results for water vapor permeability.

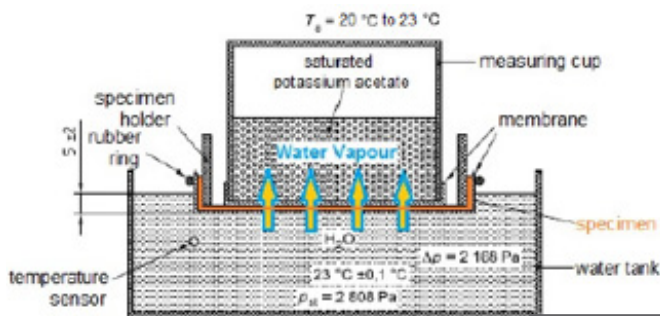
This water vapor permeability tester utilizes the inverted cup method to measure water vapor transfer, which is a more accurate approach than the dry desiccant cup method. With the inverted cup method, the water sits against the fabric which produces a higher breathability figure, as the fabric isn't buffered by an air gap, which can absorb a large amount of moisture.



The water bath is heated to the required temperature of 23°C and maintained evenly throughout the bath through a circulation pump.



The test station platform is easily adjustable to ensure that the samples are immersed to the proper depth in the bath.



## A Precise Method

Studies have shown that inverted cup method can more adequately determine levels of comfort for high physical activity (heavy sweating) because it eliminates the influence of the layer of air.

**SDL Atlas** also offers other models for Vapor Permeability testers to meet other internationally recognized standards.

# Providing Confidence

For over 60 years, the SDL Atlas companies have been providing confidence in standard based testing through expertise and global partnering. Our customers can be assured that they are making informed decisions based on accurate test results.

SDL Atlas experts work closely with standards committees and retailers on development of standards. Our engineers develop instruments to meet these standards. Our service team calibrates the instruments to exacting UKAS and internal standards. High quality consumables that are consistent from batch to batch are also produced and distributed by SDL Atlas.

## Fabrics and Consumables

Consumables are a critical part of many textile tests. SDL Atlas produces and distributes a complete line of consumables. Each batch is thoroughly tested to ensure conformity and consistency from batch to batch.

Our consumables offerings include:

- Multifiber
- Cork Liners
- Abradents
- Phenolic Yellowing
- Detergents
- Ballasts
- Crocking Fabric

## Calibration & Service

- UKAS calibration
- ISO calibration
- Service support
- Factory trained representatives
- SDL Atlas service technicians



With UKAS accredited technicians located in Europe, Asia, and North America, we are prepared to support our customers in maintaining their investment and their confidence in their test instruments. SDL Atlas calibration certificates are accepted by all accreditors.

Providing confidence in standard based testing through expertise and global partnering



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