

Moisture Management Fabrics: Key to Wearer Comfort

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Abstracts

Moisture management is the process of transporting moisture in the form of perspiration away from the skin to the outer surface of a fabric or garment where it can evaporate. As such, moisture management provides a number of benefits, including thermoregulation, a reduction of perspiration build-up on a garment, a reduction of blisters and chafing caused by wet garments and a reduction of the proliferation of microorganisms. Originally, moisture management garments were designed specifically for individuals who regularly engage in physical activity, such as extreme athletes, firefighters and the military. However, given the comfort which moisture management garments provide, they are being used to an ever increasing extent in apparel applications which are less technical such as casual wear and sleepwear. Much research effort has been concentrated on designing and developing moisture management fabrics as companies aim to enhance their functionality by imparting cooling sensations, ultraviolet (UV) protection and antimicrobial efficacy. This report provides a wealth of information on the function of moisture management fibres, yarns and fabrics and their application in a variety of sectors. It also features information on the design of moisture management garments and test methods for assessing moisture management in fabrics. Furthermore, the report presents examples of innovations in moisture management fibres, fabrics and apparel as well as an outlook for the future of these increasingly important technologies.

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Middle layer

Outer layer

Controlling weight build-up

Reducing skin damage

Minimising the proliferation of Microorganisms

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Weight or thickness

Fibre fineness

Fibre types

Special finishes

Breathability

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Polyester

Polypropylene

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Merino wool

Cotton

Blends

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Body mapping technology

Adidas: BodyMapping
Adidas: Flow Mapping
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Sweating thermal manikin tests
Moisture management fabrics: key to wearer comfort

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Active outdoor wear
Flame resistant apparel
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INNOVATIONS IN MOISTURE MANAGEMENT FIBRES, FABRICS

AND APPAREL

Adidas: Climachill
Cocona: 37.5
Columbia Sportswear: Omni-Freeze Zero
Columbia Sportswear: Omni-Wick EVAP
Coolcore: Coolcore
Cotton Incorporated: TransDRY
drirelease: drirelease
HeiQ Materials: Adaptive
Invista: CoolMax
Invista: Thermo°Cool
Invista: Thermolite
Lenzing: Lenzing FR
Lenzing: Tencel
Lusom?: dryLon
Marmot: DriClime

Milliken: VisaEndurance
Mitsui & Co: Pertex
MMT Textiles: Inotek
Nanotex: Dry Inside
Nike: Dri-FIT
Nilit: Nilit Aquarius
Patagonia: Capilene
Pearl Izumi: Ultrasensor
Polartec: PowerDry
Polartec: Power Wool
Rhovyl: Rhovyl
Saucony: DryLete
Schoeller: 3XDRY
Schoeller: c_change
Schoeller: Dryskin and Dryskin Extreme
Dryskin Extreme
Sportswear Argentona: Dry-Clim
Teijin Fibers: moisture absorbing polyester fabric
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