



## Thermal insulation and breathability in footwear

### Objective:

Heat and moisture management in ready-made shoes/boots and socks/hosiery can be investigated using a Sweating Foot Model, that is to say, a moving thermoregulation model of the foot. Such qualities are particularly important for comfort and hygiene (e.g. foot odour, blisters).

### The test is particularly suitable for:

- socks and hosiery,
- shoes and boots as well as
- a combination of the above

### Description:

Measurements are taken with the help of the thermoregulation model of the human foot. During this process, the foot model is fitted with a sample model of the item of footwear being tested. In the case of shoes/boots a (standard) sock is also placed on the model, as this reflects reality.

Thermal insulation as well as water vapour resistance can be tested under static as well as dynamic conditions. By means of a walking simulator, the movement of air around/through the shoe as well as the pumping effect as the foot moves (ventilation) can be monitored.

The segmentation of the foot model into 13 different segments allows a detailed analysis of weaknesses and/or optimisation possibilities for the different areas of the foot and lower leg.

In addition to standard measurements, test designs can be customized. In particular, regarding the ambient atmosphere, perspiration rates as well as alternating phases of perspiration and dryness.

### Your advantages as a client:

- Product optimization during development
- Comparable measurement of heat and moisture management of footwear
- Objective and standardized measurements instead of highly time-consuming trials with test persons

### Requirements for the sample model

#### General:

- The test samples are tested in new condition.

#### Amount of material:

- At least one right shoe
- Shoe size dependent on the fit (Germany/EU size 43, UK size 9, US size 10 approx.)

#### Duration of testing:

- Dependent on the amount and nature of the material (15 working days after submission of test sample)

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