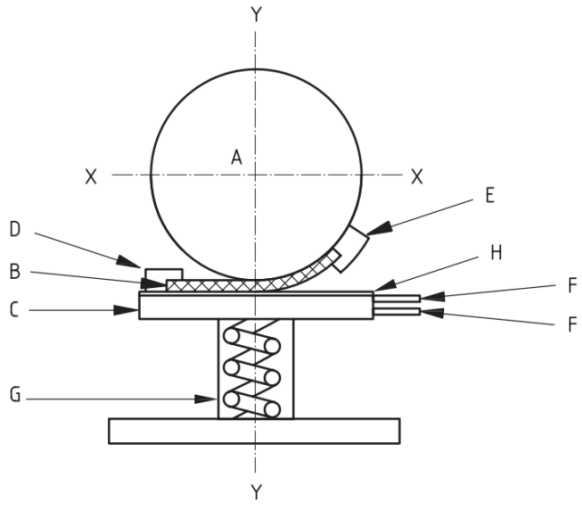
DIN EN ISO 20344 Test Methods for Insole and Insock

Description

7 Test methods for insole and insock
7.1 Determination of insole thickness Cut through the sole in the region of the cleat and measure the thickness of the insole using a graduated
eyepiece with 0,1 mm scale graduations.
7.2 Determination of water absorption and desorption of insole and insock
7.2.1 Principle
A test piece is positioned on a wet base plate and is submitted to repeat flexing under a given pressure (in the same manner as the insole of a shoe during walking).
The water absorption at the end of test and the water desorption following the tests are determined.
7.2.2 Apparatus
The apparatus comprises the following items (see Figure 37).
7.2.2.1 Brass roller (A), of diameter (120 + 1) mm and width (50 + 1) mm, which is placed over the test piece (B).
7.2.2.2 Platform (C), with roughened upper surface and with sufficient perforations to allow the surface to be kept wet by a flow of water through the platform. The upper surface of the platform (C) is covered by a strip of cotton gauze consisting of 50 % of cotton and 50 % of polyamide of mass per unit area (60,5 ± 2) g/m2.
7.2.2.3 Clamp (D), to hold one short side of the test piece (B) in a horizontal position on the platform (C).

7.2.2.4 Clamp (E), to attach the other short side of the test piece to the roller with the attached side being
parallel to the axis of the roller. The clamp is held by a weak spring to maintain the sample under slight tension.
7.2.2.5 Water supply (F), through the platform (C) and a means of draining away excess water.
7.2.2.6 Means, of moving the axis of the roller, with a to-and-fro motion along the X?X axis, with an amplitude of (50 + 2) mm about a point directly over the midpoint of the test piece at frequency of (20 ± 1) cycles per min.
The movement of the axis causes the roller to move backwards and forwards along the test piece, raising one end and bending it to conform to the shape of the roller.
7.2.2.7 Means (G), of pressing the platform, test piece and roller together with a force of (80 + 5) N.



Key

A brass roller
B test piece
C platform
D clamp on the platform
E clamp on the brass roller
F water supply
G means of pressing the platform
H cotton gauze

Figure 37 — Schematic diagram of test apparatus (example)

7.2.2.8 Press knife, to cut test pieces of dimensions (110 ± 11) mm × (40 ± 1) mm.
7.2.2.9 Balance, capable of measuring to within 0,001 g.
7.2.2.10 Clock, with an accuracy of within 1 s.
7.2.2.11 Silicone grease, or suitable adhesive.

7.2.3 Sampling and conditioning
In the case of footwear, the test piece should be taken from the forepart of the insole, in the longitudinal direction. For sheet materials, the test pieces are taken in the two principal directions, one at 90° to the other.
Test pieces shall be strips of (110 ± 11) mm × (40 ± 1) mm. If the test piece is too thick for the clamps, reduce the thickness in the clamping area, removing the face which is not in contact with the foot.
Apply a little silicone grease or a suitable adhesive over the edges of the test piece in order to prevent the
ingress of water through the sides.

7.2.4 Procedure
Weigh the test piece to the nearest 0,001 g (mO).
Place the cotton gauze on the platform (C).
Apply the test piece in the apparatus with the surface which would be in contact with the foot in contact with platform (C) covered with the cotton gauze. Attach the narrow ends to the platform and roller and apply a force of (80 ± 5) N.
Open the valve to enable the flow of water and adjust this to (7,5 ± 2,5) ml/min over the platform.

Switch on the machine and note the time.
Run the test for 1 h and stop the water supply 1 min before stopping the machine.
Remove the test piece and weigh it to the nearest 0,001 g, recording its mass, mF.
Recondition the test piece by leaving it on a flat waterproof surface in a controlled environment (see Clause 4) for a period of 24 h, then reweigh the test piece to the nearest 0,001 g, mR.

7.2.5 Expression of results
7.2.5.1 Water absorption
Calculate the water absorption using the following equation:

$$W_A = \frac{m_F - m_O}{A} \quad (7)$$

where

W_A is the water absorption, expressed in mg/cm^2;

m_O is the initial mass of the test piece, in mg;

m_F is the final mass of the test piece, in mg;

A is the area of the test piece in cm^2.

Express the water absorption to the nearest 1 mg/cm^2.

7.2.5.2 Water desorption
Calculate the water desorption using the following equation:

$$W_D = \frac{m_F - m_R}{m_F - m_O} \times 100 \quad (8)$$

where

W_D is the water desorption, as a percentage of the mass of water absorbed;

m_O is the initial mass of the test piece, in g;

m_F is the final mass of the test piece in g;

m_R is the mass of the reconditioned test piece in g.

Report the water desorption to the nearest 1 %.

Insole and Insock Water Absorption tester (Permometer)

This **Insole / Insock Absorption And Desorption Tester** is used to determine the water absorption and desorption of insole and insock for various shoes. The specimen, placed onto a wet base plate, is submitted to repeated flexing during under a given pressure (in the same manner as the insole of a shoe during working).

Brass Roller	Diameter (120 + 1) mm , Width(50 + 1) mm
Speed	20 ± 1 cycles / min
Stroke	50 ± 2 mm
Press Load	80 ± 5N
Water Flow	7.5 ± 2.5 ml/min
Sample Size	110±11 ×40±1mm
Timer	Digital
Power Supply	1?AC 220V 50/60HZ
Dimensions	69 x 50 x 70 cm
Weight	120 kg
Standards	EN ISO 20344 section 7.2 GB/T 20991 section 7.2EN ISO 20347 section 5.7.3 AS/NZS 2210.2 section 7.2EN 12746, ISO 22649, SATRA TM220BS 3144 section 22

Category

1. Equipment for Standards
2. Standards