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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 3903.4-2017

Footwear - Test methods for whole shoe - Hardness

鞋类 整鞋试验方法 硬度

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Foreword

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA ICS

GB/T 3903.4-2017

> Replacing GB/T 3903.4-2008

Footwear -- Test methods for whole shoe -- Hardness

Footwear -- Test methods for whole shoe -- Hardness 1 Scope

This Standard specifies the test methods for hardness of footwear outsoles and heels. This Standard is applicable to the determination of the hardness of whole shoe outsoles and heels. > NOTE: The sole materials (sheets) can be determined with reference to this Standard.

2 Normative references

The following documents are essential to the application of this document. For dated references, only the editions with the dates indicated are applicable to this document. For undated references, only the latest editions (including all the amendments) are applicable to this document.

GB/T 531.1-2008 Rubber vulcanized or thermoplastic -- Determination of indentation hardness -- Part 1: Durometer method (Shore hardness)

GB/T 22049 Footwear -- Standard atmospheres for conditioning and testing of footwear and components for footwear

HG/T 2489-2007 Cellular for shoes -- Determination of hardness

3 Principle

USE a Shore durometer. PRESS the indenter of the prescribed shape into the test piece under certain conditions. MEASURE the depth of vertical indentation. CONVERT it to a hardness value. The test results are influenced by the shape of the indenter and the applied pressure. Therefore, there is no simple correspondence between the results of tests using different types of durometers.

7 Test procedures 7.1 CHECK the test pieces. If there are any impurities on the surface, USE gauze moistened with alcohol to wipe them clean.

7.2 SELECT the flat surface of the sole or the main material of the heel as the test site (if the product standard stipulates the test site, SELECT the flat part at the specified test site). If there is no flat part, it shall be grinded. The grinding depth shall be based on the exact removal of patterns, so that the surface of the test piece is flat. When testing the cellular materials, the compact layer on the surface shall be grinded to ensure that the surface of the test piece is flat, without any mechanical damages and impurities. If the whole shoe or outsole is equipped with the shank, the shank shall be avoided.

7.3 According to the provisions of GB/T 22049, the test piece shall be placed at a temperature of $(23 \pm 2) ^\circ\text{C}$ in the standard environment for at least 4h.

7.4 Where necessary, the durometer can be mounted on the bracket.

7.5 PLACE the test piece on a hard surface, with the test site facing upwards. KEEP the surface level. PRESS the indenter foot onto the test piece at a uniform speed with no vibration as far as possible. KEEP the indenter foot parallel to the surface of the test piece. The indenter is perpendicular to the surface of the test piece and is not less than 12mm from the edge of the test specimen. APPLY enough pressure. After the indenter foot is in complete contact with the test specimen for 3s, READ the value.

7.6 For each test piece, measurements shall be taken at 3 or more points. Hardness can only be measured once at each measuring point. The distance between the points is not less than 6mm.

8 Test results 8.1 RECORD the types of the durometers in use. The value indicated by the durometer pointer is the measured value. The unit is expressed in degrees.

--- The End - - -