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DRAFT TANZANIA STANDARD

Metallic materials - Vickers hardness test - Part 1 - Test method

Draft for Stakeholder's Comments Only

TANZANIA BUREAU OF STANDARDS

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NATIONAL FOREWORD

This Tanzania Standard has been prepared under the Metals and Structures Technical Committee MEDC 2, under the supervision of the Mechanical Engineering Standards Divisional Committee.

It is identical to ISO 6507-1:2023 Metallic materials - Vickers hardness test - Part 1 - Test method, published by the International Organization for Standardization (ISO).

Terminology and conventions

Some terminologies and certain conventions are not identical to those used in Tanzania standards; attention is drawn especially to the following: -

The comma (,) has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use a full point (.) on the baseline as the decimal marker; and wherever the words 'East Africa Standard(s)' appear, referring to this standard, they should read 'Tanzania Standard(s)'.

Scope

This document specifies the Vickers hardness test method for the three different ranges of test force for metallic materials, including hard metals and other cemented carbides (see Table 1), metallic coatings and other inorganic coatings.

Table 1 — Ranges of test force

Ranges of test force, F N	Hardness symbol	Designation
$F \geq 49{,}03$	$\geq HV\,5$	Vickers hardness test
$1{,}961 \leq F < 49{,}03$	$HV\,0{,}2$ to $<HV\,5$	Low-force Vickers hardness test
$0{,}009\,807 \leq F < 1{,}961$	$HV\,0{,}001$ to $<HV\,0{,}2$	Vickers microhardness test

The Vickers hardness test is specified in this document for lengths of indentation diagonals between 0,020 mm and 1,400 mm. Using this method to determine Vickers hardness from smaller indentations is outside the scope of this document as results would suffer from large uncertainties due to the limitations of optical measurement and imperfections in tip geometry.

The Vickers hardness specified in this document is also applicable for metallic and other inorganic coatings including electrodeposited coatings, autocatalytic coatings, sprayed coatings and anodic coatings on aluminium.

This document is applicable to measurements normal to the coated surface and to measurements on cross-sections, provided that the characteristics of the coating (smoothness, thickness, etc.) permit accurate readings of the diagonal of the indentation.

This document is not applicable for coatings with thickness less than 0,030 mm when testing normal to the coating surface. This standard is not applicable for coatings with thickness less than 0,100 mm when testing a cross-section of the coating. ISO 14577-1 can be used for the determination of hardness from smaller indentations."

A periodic verification method is specified for routine checking of the testing machine in service by the user.

For specific materials and/or products, relevant International Standards exist.

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