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**Fine ceramics (advanced ceramics,  
advanced technical ceramics) — Test  
method for hardness of monolithic  
ceramics at room temperature**

*Céramiques techniques — Méthode d'essai de dureté des céramiques  
monolithiques à température ambiante*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14705 was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

This second edition cancels and replaces the first edition (ISO 14705:2000), which has been technically revised.

# Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for hardness of monolithic ceramics at room temperature

## 1 Scope

This International Standard specifies a test method for determining the Vickers and Knoop hardness of monolithic fine ceramics at room temperature.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4545-1:2005, *Metallic materials — Knoop hardness test — Part 1: Test method*

ISO 4545-2:2005, *Metallic materials — Knoop hardness test — Part 2: Verification and calibration of testing machines*

ISO 4545-3:2005, *Metallic materials — Knoop hardness test — Part 3: Calibration of reference blocks*

ISO 4545-4:2005, *Metallic materials — Knoop hardness test — Part 4: Table of hardness values*

ISO 6507-1:2005, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6507-2:2005, *Metallic materials — Vickers hardness test — Part 2: Verification and calibration of testing machines*

ISO 6507-3:2005, *Metallic materials — Vickers hardness test — Part 3: Calibration of reference blocks*

ISO 6507-4:2005, *Metallic materials — Vickers hardness test — Part 4: Tables of hardness values*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### Vickers hardness

value obtained by dividing the applied force by the surface area of the indentation computed from the mean of the measured diagonals of the indentations, assuming that the indentation is an imprint of the undeformed indenter

NOTE 1 Vickers hardness may be expressed in two different units:

- with units of GPa, obtained by dividing the applied force, in kN, by the surface area of the indentation, in mm<sup>2</sup>;
- Vickers hardness number, obtained by dividing the applied force, in kgf, by the surface area of the indentation, in mm<sup>2</sup>, without the units specified.

NOTE 2 Use of Vickers hardness with units of GPa is preferred.