

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of thickness of ceramic films by contact-probe profilometer (ISO 18452:2005)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 18452:2016 sisaldab Euroopa standardi EN ISO 18452:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 18452:2016 consists of the English text of the European standard EN ISO 18452:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of thickness of ceramic films by contact-probe profilometer (ISO 18452:2005)

Céramiques techniques - Détermination de l'épaisseur des films céramiques avec un profilomètre à contact (ISO 18452:2005)

Hochleistungskeramik - Bestimmung der Dicke keramischer Schichten mit einem Kontaktprofilometer (ISO 18452:2005)

This European Standard was approved by CEN on 25 March 2016.

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European foreword

The text of ISO 18452:2005 has been prepared by Technical Committee ISO/TC 206 “Fine ceramics” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18452:2016 by Technical Committee CEN/TC 184 “Advanced technical ceramics” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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Endorsement notice

The text of ISO 18452:2005 has been approved by CEN as EN ISO 18452:2016 without any modification.

Contents		Page
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle of measurement	1
5	Test environment	1
6	Apparatus	2
7	Test pieces	3
8	Procedure	4
9	Calculation	5
10	Limits to step height	5
11	Test report	6
Annex A (informative) Effect of amplification factor and levelling error on measured layer thickness		7

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1 Scope

This International Standard specifies a method for the determination of the film thickness of a fine ceramic film and ceramic coatings by a contact-probe profilometer. The method is suitable for film thicknesses in the range of 10 nm to 10 000 nm.

NOTE The method requires a distinct and clearly formed boundary between coated and uncoated parts of the substrate.

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 3274, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Nominal characteristics of contact (stylus) instruments*

3 Terms and definitions

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

3.1

fine ceramic film

coating consisting of a fine ceramic material which thinly covers the substrate surface

EXAMPLE Typical materials are oxides, carbides, nitrides, etc., deposited by methods such as vacuum evaporating, sputtering, chemical vapour deposition, etc.

4 Principle of measurement

This International Standard concerns the measurement of the film thickness of fine ceramic coatings on a substrate using a contact-probe profilometer. The film thickness shall be calculated from the profile which is obtained by scanning the contact probe in the direction $C \rightarrow B \rightarrow A$, as shown in Figure 1. The profile is in proportion to the difference in height between the parts covered and not covered with the fine ceramic film.

5 Test environment

The test shall be carried out in an environment free from mechanical vibrations that may affect the measurement.