

STN	Jemná keramika (špeciálna keramika, špeciálna technická keramika) Mechanické vlastnosti keramických kompozitov pri teplote okolia na vzduchu pri atmosférickom tlaku Stanovenie pružných vlastností ultrazvukovou metódou (ISO 18610: 2016)	STN EN ISO 18610 72 7522
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Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure - Determination of elastic properties by ultrasonic technique (ISO 18610:2016)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure - Determination of elastic properties by ultrasonic technique (ISO 18610:2016)

Céramiques techniques (céramiques avancées, céramiques techniques avancées) - Propriétés mécaniques des céramiques composites à température ambiante sous air à pression atmosphérique - Détermination des propriétés élastiques par méthode ultrasonore (ISO 18610:2016)

Hochleistungskeramik - Mechanische Eigenschaften von keramischen Verbundwerkstoffen bei Raumtemperatur - Bestimmung der elastischen Eigenschaften durch eine Ultraschallmethode (ISO 18610:2016)

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EN ISO 18610:2021 (E)

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European foreword

The text of ISO 18610:2016 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 18610:2021 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

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Endorsement notice

The text of ISO 18610:2016 has been approved by CEN as EN ISO 18610:2021 without any modification.

**INTERNATIONAL
STANDARD****ISO
18610**First edition
2016-09-15

**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Mechanical properties of ceramic
composites at ambient temperature
in air atmospheric pressure —
Determination of elastic properties by
ultrasonic technique**

Céramiques techniques (céramiques avancées, céramiques techniques avancées) — Propriétés mécaniques des céramiques composites à température ambiante sous air à pression atmosphérique — Détermination des propriétés élastiques par méthode ultrasonore

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ISO 18610:2016(E)**Foreword**

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The committee responsible for this document is ISO/TC 206, *Fine ceramics*.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure — Determination of elastic properties by ultrasonic technique

1 Scope

This document specifies an ultrasonic method to determine the components of the elasticity tensor of ceramic matrix composite materials at room temperature. Young's moduli shear moduli and Poisson coefficients, can be determined from the components of the elasticity tensor.

This document applies to ceramic matrix composites with a continuous fibre reinforcement: unidirectional (1D), bidirectional (2D), and tridirectional ($\times D$, with $2 < \times \leq 3$) which have at least orthotropic symmetry, and whose material symmetry axes are known.

This method is applicable only when the ultrasonic wavelength used is larger than the thickness of the representative elementary volume, thus imposing an upper limit to the frequency range of the transducers used.

NOTE Properties obtained by this method might not be comparable with moduli obtained by ISO 15733, ISO 20504 and EN 12289.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3611, *Geometrical product specifications (GPS) — Dimensional measuring equipment: Micrometers for external measurements — Design and metrological characteristics*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

EN 1389, *Advanced technical ceramics — Ceramic composites — Physical properties — Determination of density and apparent porosity*

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