INTERNATIONAL STANDARD

ISO 6721-8

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Plastics — Determination of dynamic mechanical properties —

Part 8:
Longitudinal and shear vibration — Wave-propagation method

Plastiques — Détermination des propriétés mécaniques dynamiques —

Partie 8: Vibrations longitudinale et en cisaillement — Méthode de propagation des ondes

Reference number
ISO 6721-8:1997(E)

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.

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.

International Standard ISO 6721-8 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

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ISO 6721 consists of the following parts, under the general title *Plastics — Determination of dynamic mechanical properties*:

— *Part 1: General principles*

— *Part 2: Torsion-pendulum method*

— *Part 3: Flexural vibration — Resonance-curve method*

— *Part 4: Tensile vibration — Non-resonance method*

— *Part 5: Flexural vibration — Non-resonance method*

— *Part 6: Shear vibration — Non-resonance method*

— *Part 7: Torsional vibration — Non-resonance method*

— *Part 8: Longitudinal and shear vibration — Wave-propagation method*

— *Part 9: Tensile vibration — Sonic-pulse propagation method*

— *Part 10: Complex shear viscosity using a parallel-plate oscillatory rheometer*

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Plastics — Determination of dynamic mechanical properties —

Part 8:
Longitudinal and shear vibration — Wave-propagation method

1 SCOPE

This part of the International Standard ISO 6721 describes an ultrasonic wave propagation method for determining the storage components of the longitudinal complex modulus L^* and the shear complex modulus G^* of polymers at discrete frequencies typically in the range 0.5 MHz to 5 MHz. The method is suitable for measuring materials with storage moduli in the range 0.01 GPa to 200 GPa and with loss factors below 0.1 at around 1 MHz. With materials that have a higher loss, significant errors in velocity measurement are introduced through waveform distortion and can only be reduced using procedures that are outside the scope of this standard.

The method allows measurements to be made on small specimens, typically 50 mm x 20 mm x 5 mm, or small regions of larger specimens or sheets. It is therefore possible to obtain information on the homogeneity or anisotropy (see clause 10.5) of modulus in a specimen.

2 NORMATIVE REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to use the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.