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Designation: D 5418 – ~~99~~01

~~An American National Standard~~

Standard Test Method for ~~Measuring the~~ Plastics: Dynamic Mechanical ~~Properties of Plastics Using a Dual~~ Properties: In Flexure (Dual Cantilever Beam)[1]

This standard is issued under the fixed designation D 5418; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This test method covers the use of dynamic mechanical instrumentation for gathering and reporting the viscoelastic properties of thermoplastic and thermosetting resins and composite systems in the form of rectangular bars molded directly or cut from sheets, plates, or molded shapes. The elastic modulus data generated may be used to identify the thermomechanical properties of a plastics material or composition.

1.2 This test method is intended to provide means for determining the modulus as a function of temperature of plastics using nonresonant forced-vibration techniques, as outlined in Practice D 4065. Plots of the elastic (storage), loss (viscous) and complex moduli, and tan delta as a function of frequency, time, or temperature are indicative of significant transitions in the thermomechanical performance of the polymeric material system.

1.3 This test method is valid for a wide range of frequencies, typically from 0.01 to 100 Hz.

1.4 Apparent discrepancies may arise in results obtained under differing experimental conditions. These apparent differences from results observed in another study can usually be reconciled, without changing the observed data, by reporting in full (as described in this test method) the conditions under which the data were obtained.

1.5 Test data obtained by this test method ~~is~~ are relevant and appropriate for use in engineering design.

1.6 The values stated in SI units are to be regarded as standard.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no similar or equivalent ISO standard.

2. Referenced Documents

2.1 *ASTM Standards:*

[1] This test method is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.10 on Mechanical Properties.

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***A Summary of Changes section appears at the end of this standard.**

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