

ISO 6721-3:2021-02 (E)

Plastics - Determination of dynamic mechanical properties - Part 3: Flexural vibration - Resonance-curve method

Contents		Page
Foreword		iv
1	Scope	1
2	Normative reference	1
3	Terms and definitions	1
4	Principle	1
5	Test apparatus	2
5.1	General	2
5.2	Clamps or suspension fibres	2
5.3	Exciter and detector	2
5.4	Temperature-controlled enclosure	3
5.5	Gas supply	3
5.6	Temperature-measurement device	3
5.7	Devices for measuring test specimen dimensions	4
6	Test specimens	4
6.1	General	4
6.2	Shape and dimensions	5
6.3	Preparation	5
7	Number of test specimens	5
8	Conditioning	5
9	Procedure	5
9.1	Test atmosphere	5
9.2	Measurement of specimen cross-section	5
9.3	Measurement of specimen density	5
9.4	Mounting the test specimens and adjustment of the transducers	6
9.4.1	Method A	6
9.4.2	Method B	6
9.4.3	Adjustment of the transducers	6
9.5	Varying the temperature	6
9.6	Varying the frequency	6
9.7	Recording the resonance curve	6
10	Expression of results	7
10.1	Symbols	7
10.2	Calculation of flexural storage modulus, E'_f	7
10.3	Calculation of flexural loss factor, $\tan \delta_f$	8
10.4	Calculation of flexural loss modulus, E''_f	8
10.5	Plotting the complex modulus as a function of temperature	8
11	Precision	8
11.1	Storage modulus	8
11.2	Loss factor	8
11.3	Precision of the methods	9
12	Test report	9
Annex A (informative) Interlaboratory testing		10
Bibliography		13